ORACLE NetSuite

SuiteFlow User Guide

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SuiteFlow Overview

Use SuiteFlow to create and run workflows in NetSuite. A workflow defines a custom business process for a standard or custom record in NetSuite. Business processes can include transaction approval, lead nurturing, and record management. A workflow defines and automates the business process. Watch the following help video for a basic overview of the SuiteFlow feature.

SuiteFlow Overview

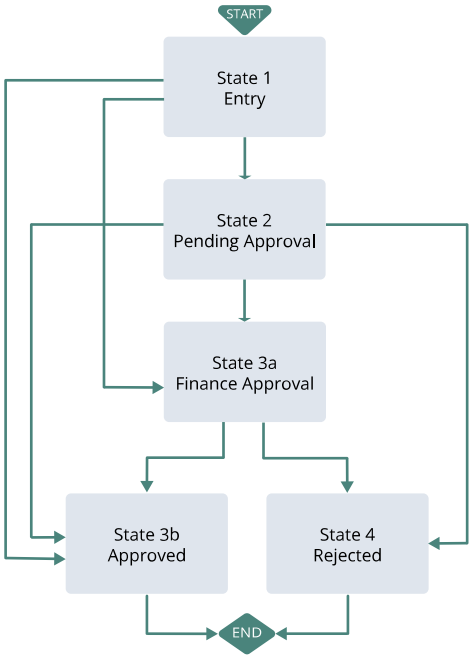
To view, create, and edit workflows, you must have the appropriate permission and permission level required for working with the base record types in the workflow. For access to all SuiteFlow functionality, use the Administrator role. For more information, see Required Permissions for SuiteFlow.

You define workflows for a specific record type and contain the stages (or states) of a record as it moves through the business process. In each state, a workflow defines the actions to be performed, like sending emails or adding buttons to a record form, before the workflow completes or transitions to another state. A workflow can move between different states, or transition, depending on the business process requirements. The actions and transitions can contain conditions that must be met before the action or transitions execute.

NetSuite starts an instance of a workflow on a record and a record transitions between states in a workflow based on specific triggers. Triggers are events that occur when records are viewed, created, or updated. You can also direct NetSuite to run workflow instances on records based on a schedule.

Use the Workflow Manager Interface in SuiteFlow to create and edit workflows. Create workflows in the Workflow Manager and a workflow instance initiates and executes according to the defined business process.

The following diagram shows a sample approval business process for an estimate:



In the following example, a sales rep creates an Estimate record. SuiteFlow initiates an instance of the approval workflow to automate the approval process for the estimate. Workflow actions and conditions on each state determine how the estimate transitions through the approval process.

The following table describes the states in the workflow and their associated actions and transitions when the sales rep creates the record:

State	Description
State 1 Entry	The first state a record enters in the workflow after estimate creation is State 1 Entry. This state begins the approval process. The Entry state sets the estimate's **Approval Status** field to **Pending Approval** and then executes transitions according to the following conditions: ▪ If the sales rep has a supervisor, the estimate transitions to State 2 Pending Approval. ▪ If the sales rep has no supervisor and the estimate value is less than $50,000, the estimate transitions to State 3b Approved. ▪ If the sales rep has no supervisor and the estimate value is $50,000 or greater, the estimate transitions to State 3a Finance Approval.
State 2 Pending Approval	This state locks the record so only the sales rep's supervisor can access it, and adds **Approve** and **Reject** buttons to the record form. Each button is set up to transition to a different state. The next transition depends on the button clicked: ▪ Approve. If the estimate value is less than $50,000, record transitions to State 3b Approved. If the estimate value is $50,000 or greater, the estimate transitions to State 3a Finance Approval. ▪ Reject. The estimate transitions to State 4 Rejected.
State 3a Finance Approval	This state locks the record so only the Finance Manager can access it, and adds **Approve** and **Reject** buttons to the record form. The next transition depends on the button clicked: ▪ Approve. The estimate transitions to State 3b Approved. ▪ Reject. The estimate transitions to State 4 Rejected.
State 3b Approved	Sets the estimate's **Approval Status** field to **Approved** and the workflow completes.
State 4 Rejected	Sets the estimate's **Approval Status** to **Rejected** and the workflow completes.

Getting Information About SuiteFlow

The following table describes SuiteFlow concepts and where you can get more information:

Concept	Description
Workflow Manager interface	Use the Workflow Manager to create and edit workflows. The interface includes the workflow definition page, diagrammer, and context panel. See Workflow Manager Interface.
Workflow elements overview	Get an overview of each workflow element and links to more information about using the element. See Workflow Elements.
Workflow audience	Learn about who can create or run workflows. See Workflow Audience.
Workflow initiation	Learn when NetSuite starts a workflow instance on a record. See Workflow Initiation.
Tutorial	Follow the steps in the tutorial to create a workflow based on an Opportunity record. Use the steps in the tutorial to become familiar with creating the basic elements of a workflow, including states, actions, transitions, and conditions. See Creating Your First Workflow.

Concept	Description
Creating and editing workflows and workflow elements	Find all of the procedures and descriptions of the options required to create a workflow. See Working with Workflows.
Administering workflows	After you create a workflow, you can do things like search for workflows, cancel instances, perform mass updates, and bundle workflows. See Workflow Administration.
Reference information	Learn more about workflow triggers and actions. Includes detailed information about each server and client trigger and each action types that you can use in a workflow, in addition to examples of use for workflow elements. See SuiteFlow Reference and Examples.
Testing and troubleshooting workflows	During workflow development, you need to test your workflows. NetSuite tracks workflow instance activity and generates execution logs to assist you with workflow testing and troubleshooting. See Testing and Troubleshooting Workflows.
Example workflows	Use the examples to see how to create certain types of workflows. Each example includes the detailed steps required to create and then test the workflow. See Workflow Samples.

Accessing SuiteFlow

To access the SuiteFlow UI, you need to have the SuiteFlow feature enabled in your NetSuite account. You also need to use a role that has the Workflow permission assigned to it. For more information about enabling the SuiteFlow feature, see Enabling SuiteFlow. For more information about SuiteFlow permissions, see Required Permissions for SuiteFlow.

To access the SuiteFlow UI, go to Customization > Workflow > Workflows. To create a new workflow, click **New Workflow**.

Required Permissions for SuiteFlow

Access to NetSuite data and to the NetSuite UI is based on users, roles, and permissions. Each role has a set of associated permissions that determine what data users can see and what tasks they can perform. Permissions are associated with roles and roles are assigned to users. For more information about roles and permissions, see the help topic NetSuite Users & Roles.

For access to all SuiteFlow functionality, use the Administrator role. For more information about the Administrator role, see the help topic The Administrator Role.

The following table describes the permissions related to SuiteFlow, the associated tasks, and any additional requirements.

Permission Name	Usage Description	Notes
Workflow	View, create, and edit workflows	▪ SuiteFlow must be enabled in your account ▪ You must have the appropriate permission and permission level for working with the base record types in the workflow
SuiteScript	Create and edit workflow action script records	▪ SuiteFlow must be enabled in your account
Custom Fields	▪ View and edit the Workflow Custom Field record	—

Permission Name	Usage Description	Notes
	▪ View and edit the Workflow State Custom Field record	
Core Administration Permissions	Use the Cancel field in Workflow Instance searches	—
Control SuiteScript and Workflow Triggers in Web Service Request	Set the SOAP header preference for disabling scripts and workflow triggers per request	—
Control SuiteScript and Workflow Triggers per CSV Import	Check or clear the run Server SuiteScript and Trigger Workflow box for each report	—

To add the SuiteFlow permission to a standard role:

1. Go to Setup > Users/Roles > Manage Roles (Administrator).
2. On the Manage Roles page, click **Customize** next to the role that you want to add the SuiteFlow permission to.
3. On the **Permissions** subtab, click **Setup**.
4. In the **Permissions** dropdown list, click **Workflow**, and then click **Add**.
5. Click **Save** to apply your changes to the role.

Enabling SuiteFlow

Access to SuiteFlow is controlled using roles and permissions. You need to be logged into and using a role with the Workflow permission assigned to it. Additionally, the SuiteFlow feature must be enabled on the account you are using.

Note: To enable SuiteFlow on an account, you must be logged into the Administrator role.

To enable SuiteFlow:

1. Go to Setup > Company> Setup Tasks > Enable Features.
2. Click the **SuiteCloud** subtab.
3. Under SuiteFlow, check the **SuiteFlow** box.
4. Click **Save**.

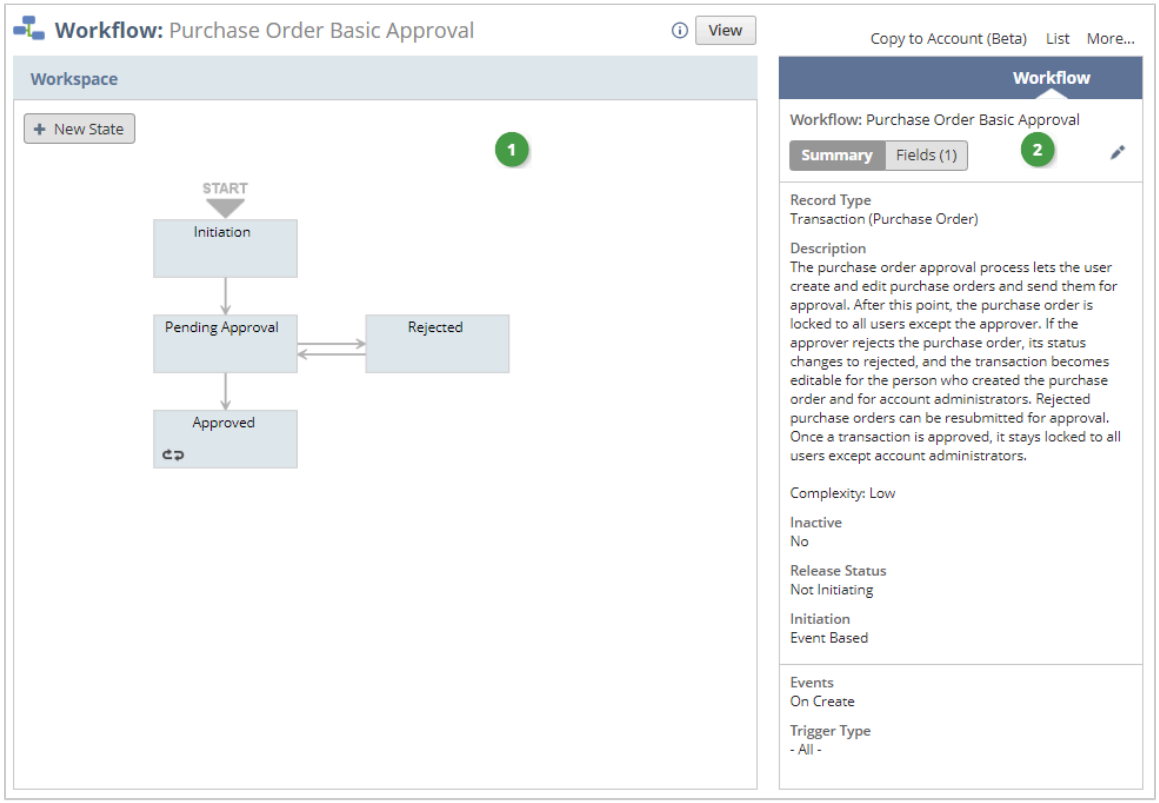
Important: When you enable SuiteFlow, you may be guided through a series of prompts to enable Client and Server SuiteScript. Do not turn off any of these features after they are enabled.

After SuiteFlow is enabled on an account, users with the Workflow permission can view, create, and edit workflows. For more information about workflow permissions, see Required Permissions for SuiteFlow.

Workflow Manager Interface

The Workflow Manager is a drag-and-drop tool that you use to build workflows in NetSuite. Use the Workflow Manager to create, view, and edit the state, action, and transition workflow elements.

The following screenshot shows the Workflow Manager interface in edit mode:



The Workflow Manager includes the following interface elements:

- 1. **Diagrammer.** In edit mode, use the diagrammer to add and edit states and transitions. In view mode, user the diagrammer to view workflow states, actions, and transitions. See Workflow Diagrammer.
- 2. **Context Panel.** In edit mode, use the context panel to add, edit, and delete workflow elements. In view mode, use the context panel to view workflow element information. See Workflow Context Panel.

For more information about view and edit modes, see Workflow Manager Interface View and Edit Modes.

Workflow Manager Interface View and Edit Modes

The Workflow Manager Interface has two modes: view and edit. Use view mode to view workflow details. Use edit mode to configure workflow details. Access view mode from the Workflow list page (Customization > Scripting > Workflows) by clicking a workflow name. Access edit mode also from the Workflows list page by clicking **Edit** to the left of a workflow name.

In view mode, click **Edit** to switch to edit mode.

In edit mode, click **View** when you're done making changes to return to view mode.

Workflow Definition Page

The workflow definition page contains the properties of a workflow.

The following table describes the type of properties that you set on the workflow definition page when in edit mode:

Property Type	Description
Basic properties	All workflows include these basic properties: ▪ **Record type and sub type.** All workflows must have a base record type. For Customer, Item, and Transaction records, you can also specify a sub type. See Workflow Base Record. ▪ **Owner.** The owner of the workflows decides who the workflow runs for during testing, and gets emails if there are errors during workflow execution. For information, see Workflow Audience. ▪ **Execute as Admin.** Indicates that the workflow runs as a user with administrator permissions. See Creating a Workflow. ▪ **Release Status**. Indicates the workflow's release status. Options include Suspended, Not Initiating, Testing, and Released. The default option is Testing. See Release Status for Workflow Instances. ▪ **Keep Instance and History**. Specify when workflow instance, workflow history, and workflow logs are saved for a workflow. Options include Only When Testing, Never, and Always. See Disabling History for a Workflow. ▪ **Enable logging.** Specify whether the workflow generates a workflow execution log when the workflow runs. See Creating a Workflow. ▪ **Inactive.** Indicates the workflow doesn't initiate at any time. See Inactivating a Workflow.
Initiation	Workflow initiation includes the following options: ▪ **Event Based.** The workflow initiates on a record create event, record update event, or record view event for the base record type. For information, see Initiating a Workflow on an Event. ▪ **Scheduled.** Run a workflow on a schedule. For information, see Initiating a Workflow on a Schedule.
Event Definition	Define the events and conditions for workflow initiation. Includes the following properties: ▪ **On Create or On Update.** Indicates the workflow initiates when a record is created, updated, or viewed. For information, see Initiating a Workflow on an Event. ▪ **Trigger type.** The server trigger on which the workflow initiates. For information, see Server Triggers. ▪ **Event Types** and **Contexts**. You can restrict the workflow initiation to specific event and execution context types. For information, see Workflow Event Types and Execution Contexts. ▪ **Condition.** Use a condition or custom formula to define requirements that must be met for the workflow to initiate. For information, see Workflow Conditions. ▪ **Saved search.** Use a saved search as a workflow initiation condition.

At the bottom of the Workflow Definition page there are two subtabs:

- Workflow Definition Page Fields Subtab: used to create custom workflow fields. For more information, see Workflow Definition Page Fields Subtab.
- Workflow Definition Page History Subtab: used to view a historical list of changes made to the workflow. For more information, see Workflow Definition Page History Subtab.

Note: For more information about using this page to create or edit a workflow, see Working with Workflows.

Workflow Definition Page Fields Subtab

The Fields subtab on the Workflow Definition page shows all of the fields created for the workflow. Use this subtab to view and create workflow fields.

To create a workflow field from the Workflow Definition page Fields subtab:

1. If you haven't already, open the workflow you want to create a field in at Customization > Scripting > Workflows.
2. In the Workflow Context Panel, click the edit icon to open the Workflow Definition page. By default, the Fields subtab displays at the bottom of the page.
3. Click **New Field**.
4. For detailed information about creating a workflow field, see Creating and Using Workflow Fields.

Workflow Definition Page History Subtab

This subtab provides historical log information about changes made to the workflow. You can get to the History subtab from the Workflow Context Panel by clicking the edit icon and selecting History at the bottom of the page.

Note that errors aren't logged on the History subtab. This is because when an error occurs during a workflow's execution, the workflow is rolled back and the instance of the workflow no longer exists in the database. As such, errors cannot be logged for an instance of a workflow that no longer exists in the database.

The table below lists what's logged on this subtab:

Column	Description
Date/Time	The date and time when the change took place.
User	The user who made the change.
Component	The workflow element that was changed, for example, Workflow, Transition, or Action.
Script ID	The script ID of the workflow element that was changed.
Type	The type of change that was made: Create, Edit, or Delete.
Note	Includes information about the following changes: ▪ Indicates if a workflow has changed to Active or Inactive on the Workflows list page. ▪ Indicates when a workflow's release status is changed on the Change Status page for locked workflows, for example, changed from Testing to Released. ▪ Indicates if a workflow has been copied. ▪ Indicates the updated workflow release status. ▪ Indicates workflow script ID changes.
Revision	The number of the workflow revision. Any change made to a workflow's definition or any of its children increases its revision number. For more information, see Workflow Revisions.

The following table describes information logged on the subtab:

Workflow Element	Logged Actions
Workflow	▪ When a workflow is created or updated on the Workflow Definition page. ▪ When a workflow is set to Active or Inactive on the Workflows list page. ▪ When a workflow's release status is changed on the Change Status page for locked workflows, for example, changed from Testing to Released.

	▪ When a workflow is copied.
State	▪ When a state is created, updated, or deleted from the State Definition page. ▪ When a state is deleted from the Workflow Diagram. ▪ When a state is deleted from the Context Panel. ▪ When a state is moved in the Workflow Diagram.
Action	▪ When an action is created, updated, or deleted from the Action Definition page. ▪ When an action is deleted from the Context Panel.
Transition	▪ When a transition is created, updated, or deleted from the Transition Definition page. ▪ When a transition is deleted from the Context Panel. ▪ When a transition is deleted from the Workflow Diagram.
Condition	▪ When a condition is created, updated, or deleted from the Workflow / Action / Transition Definition pages. ▪ When a condition is deleted from the Workflow Condition Definition page.
Script ID	▪ When a workflow element's script ID is changed. ▪ When a workflow custom field script ID is changed. ▪ When a workflow custom state field script ID is changed.

The following table describes several special cases for logging of data on the History subtab:

Workflow Element	**Special Cases**
Workflow	▪ Logs are created when a workflow is set to Active or Inactive on the Workflows page. ▪ Logs are created when a workflow's status is changed on the status page for locked workflows. For example, a workflow status is changed from Testing to Released. ▪ When a workflow element is deleted, only one log entry appears on the History subtab, regardless of any child elements that are also deleted. ▪ Workflow deletion is not logged, but you can search for deleted workflow records. See the help topic Searching for Deleted Records. ▪ Parent relationship is not logged. For example, when an action is created, the state in which the action is created is not logged. ▪ When a workflow definition is edited, each time **Save** is clicked, it is logged on the History subtab. Logs are created even when no change is submitted due to the **Save**.
State	▪ When a state is edited, each time **Save** is clicked, it is logged on the History subtab. Logs are created even when no change is submitted due to the **Save**.

Action	▪ Custom Action is logged as Action.
	▪ Action order is logged according to where it was changed:
	  ▫ Action order changed from the State Details page is logged as State Edit.
	  ▫ Action order changed from the Action Details page is logged as Action Edit.
	▪ When an action is edited, each time **Save** is clicked, it is logged on the History subtab. Logs are created even when no change is submitted due to the **Save**.

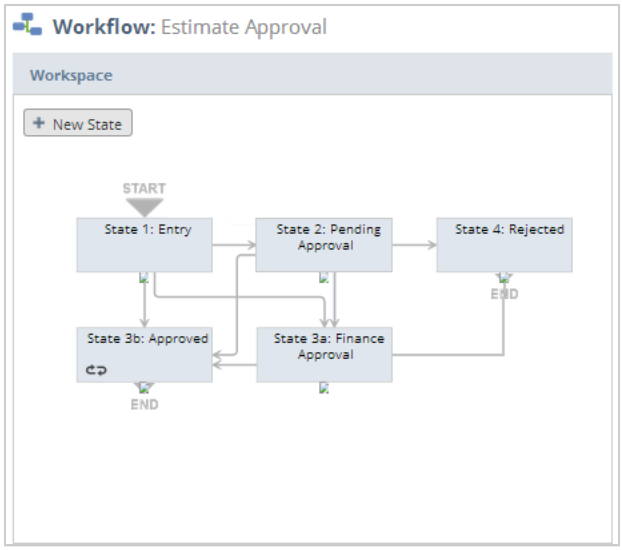
Action Groups	▪ Logged as Group Actions.
Transition	▪ When a transition is edited, each time **Save** is clicked, it is logged on the History subtab. Logs are created even when no change is submitted due to the **Save**.
Condition	▪ When all lines of a condition are deleted, it is logged as Condition Edit.

	▪ When a condition is deleted on the Condition Definition page, it is logged as Condition Delete. ▪ On the Action Details page, when the **Use** radio button is changed from **Visual Builder** to **Custom Formula**, it is logged as WF/Action Edit.

Workflow Diagrammer

The Workflow Diagrammer is a JavaScript-based editor that you can use to create and edit workflow states and transitions when in edit mode. It includes drag and drop functionality you can use to move states and transitions to reflect the business process defined by the workflow. Any changes you make in the diagrammer are saved automatically.

The diagrammer also shows the start and end states for the workflow and indicates states that are set to not exit the workflow. The diagrammer determines a state as an end state if it has no transitions to another state.



You can complete the following tasks with the diagrammer:

- **Create and edit states.** Click the **New State** button to create a state and double-click the state to open the **State** window and edit the state properties and state actions, transitions, and custom fields. For more information about creating and editing states, see Working with States.
- **Create and edit transitions.** Click the icon at the bottom of a state and drag to create a transition to another state. Double-click an existing transition to open the **Transition** window and edit the transition properties. For more information about creating and editing transitions, see Working with Transitions.
- **Reorganize the workflow states and transitions.** Click and drag states to reorder the workflow to properly reflect the business process.

Workflow Context Panel

The context panel shows workflow properties based on what you select. When in edit mode, select an object in the diagrammer and use the panel to open states, actions, and transitions for edit; create actions; open the workflow definition properties for edit; and create, edit, and delete workflow fields.

The tabs you see in the context panel depend on what you select in the diagrammer:

- **State tab**
  - Open states to edit them.
  - Create, edit, or delete actions and actions in groups.
  - Create, edit, or delete state fields.

  See State Tab on Context Panel.
- **Transition tab**

  Open transitions to edit them.

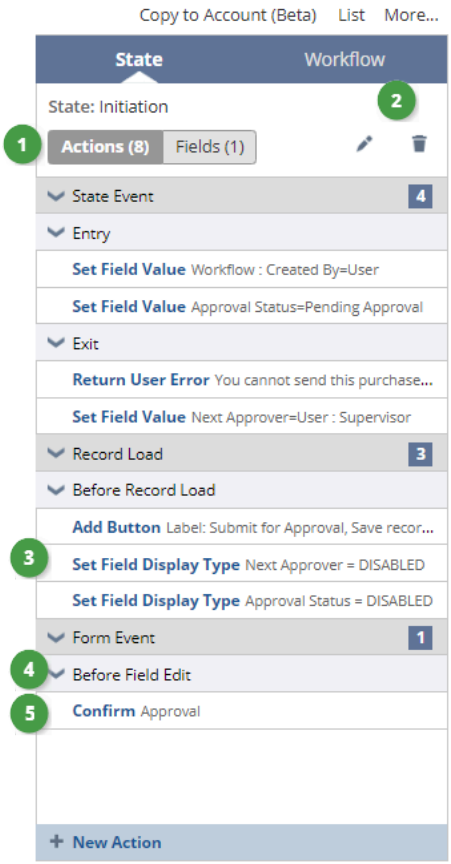
  See Transition Tab on Context Panel.
- **Workflow tab**
  - View workflow definition properties.
  - Open workflow definition properties to edit them.
  - Create, edit, or delete workflow fields.

  See Workflow Tab on Context Panel.

State Tab on Context Panel

Use the State tab to work with workflow states, workflow actions, action groups, sublist action groups, and state fields. Switch between the **Actions** and **Fields** views to create, edit, and delete actions and state fields.

The following screenshot shows the State tab:



Use the State tab to complete the following tasks:

- Edit a state to add, edit, or delete actions, transitions, and state fields, or other state properties. Click the **Edit** icon to edit the State properties in the **Workflow State** window. For more information about states and state properties, see Workflow States and Workflow Custom Fields.
- Use **New Action** to create a new action. For more information about actions, see Workflow Actions and Creating an Action.
- View action property summaries. When you point to an action, the context panel displays a summary of the properties for the action.
- View action groups and the actions within action groups. When you point to an action group, icons appear that allow you to add actions to the group, edit the group, or delete the group from the state. For details about action groups, see Using Action Groups.
- View sublist action groups and the actions within sublist action groups. When you point to a sublist action group, icons appear that let you add actions to the group, edit the group, or delete the group from the state. For details about sublist action groups, see Using Sublist Action Groups.

Trigger Categories on the State Tab

Actions that you create are displayed on the State tab under their corresponding server or client trigger category:

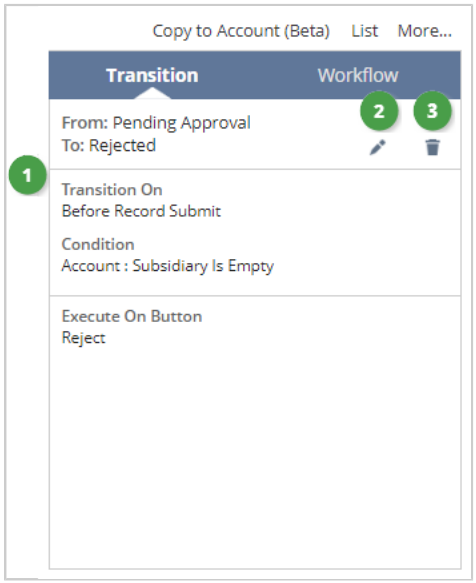
- State Event (when the workflow enters or exits a state)
- Record Load
- Form Event (any client-side user action)
- Record Save
- Scheduled

For more information about trigger execution, see Workflow Triggers.

Transition Tab on Context Panel

Use the Transition tab to edit or delete transitions that you create in the diagrammer or create through the state properties.

The following screenshot shows the Transition tab:



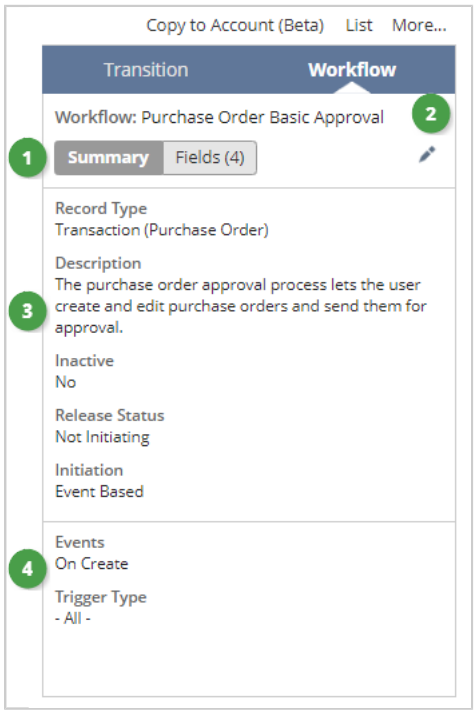
Use the Transition tab to complete the following tasks:

- Edit or delete a transition. Click the **Edit** icon to edit the transition properties in the **Workflow Transition** window. For more information about transitions, see Workflow Transitions. and Creating a Transition.
- View the transition properties that include the **From** and **To** states, the optional transition trigger and the transition condition.

Workflow Tab on Context Panel

Use the Workflow tab to view or edit the workflow properties and custom fields. Switch between the Workflow and Fields views to view a summary of workflow properties, edit the workflow properties, or create, edit, and delete workflow fields.

The following screenshot shows the Workflow tab:



Use the Workflow tab to complete the following tasks:

- Edit workflow properties. Click the **Edit** icon to edit the workflow properties in the **Workflow** window. For more information about workflow properties, see Creating a Workflow.
- View workflow properties. Properties include the record type for the workflow, the initiation type, and the trigger type.
- Create, edit, and delete workflow fields. For more information, see Workflow Custom Fields.

Workflow Elements

The following table describes the elements of a workflow:

Element	Description
Base record	The record type you're creating the workflow for. See Workflow Base Record.

Element	Description
States	These are the stages or statuses a record goes through in a business process. See Workflow States.
Triggers	These are events that happen while processing a record or when a user interacts with it. See Workflow Triggers.
Actions	These perform specific tasks based on a record's properties. See Workflow Actions.
Transitions	Moves a record to another state in a workflow. See Workflow Transitions.
Conditions	Requirements that must be met for a workflow to initiate, or for an action or transition to execute. See Workflow Conditions.
Custom fields	Variables that you can use in workflows, actions, and transitions. See Workflow Custom Fields.
Revisions	The changes made to a workflow's definition or any of its children. See Workflow Revisions.

Workflows can initiate and actions and transitions can process based on specific event types and context types. See Workflow Event Types and Execution Contexts and Workflows.

Workflow Base Record

The workflow base record is the record type you're using to define a business process. The record type can be a standard NetSuite record type, like a Customer or Transaction, or it can be a custom record type.

Specify the base record type in the **Record Type** dropdown list on the workflow definition page. Any record type for which you can create a workflow appears in the dropdown list. To access a workflow on the Workflows page, you must have full permission for the base record on which the workflow was built. Additionally, you must have the feature related to the base record enabled in your account.

Note: You cannot change the workflow record type after you save the workflow definition.

You can also pick sub types for certain types of records. The following table lists the record types for which you can select a sub type. If you select one of these record types in the **Record Type** dropdown list, the **Sub Type** field becomes required. You must then select at least one sub type before you can save the workflow.

Record Type	Available Sub Types
Customer	▪ Customer ▪ Lead ▪ Prospect
Item	Any record of type Item.
Transaction	Any record of type Transaction.

Workflow States

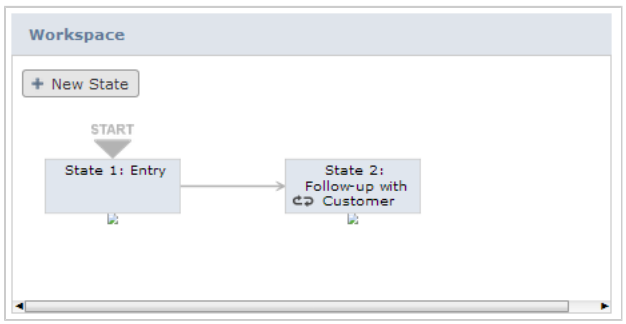
A state is a stage or status a record goes through in a business process. A workflow can contain as many states as your business process needs.. Every NetSuite workflow must contain at least one state.

Each state can contain actions and links to other states through transitions. When a record enters a state, the actions run based on their triggers and conditions, in the order they're listed. Then, any transitions to the next state run. Actions and transitions can also have conditions that control when or how they run.

The first state in a workflow is the entry state (when the record enters the workflow). The entry state is marked with a **Start** icon in the diagrammer and has the **Start State** property enabled. A workflow can have only one state, called a single state workflow..

The last state in a workflow is the end state, shown by the **End** icon in the diagrammer. Any state with no outgoing transitions is an end state. A workflow can have more than one end state, and you can also set an end state to not exit the workflow—this is called a non-exiting state.

The following example shows a sample two state workflow for an Opportunity record, where the workflow doesn't exit after it enters the second state:



Tip: You can create all of the states in your workflow at one time. You may find it easier to create all workflow states during the initial layout phase and then go back and edit states to add transitions and actions.

State Properties

You set properties for a state in the **Workflow State** window. To open this window, click the **Edit** icon in the context panel.

You also use the Workflow State window to create and edit the following workflow elements:

- Actions. See Workflow Actions.
- Transitions. See Workflow Transitions.
- State fields. See Workflow Custom Fields.

More Information about States

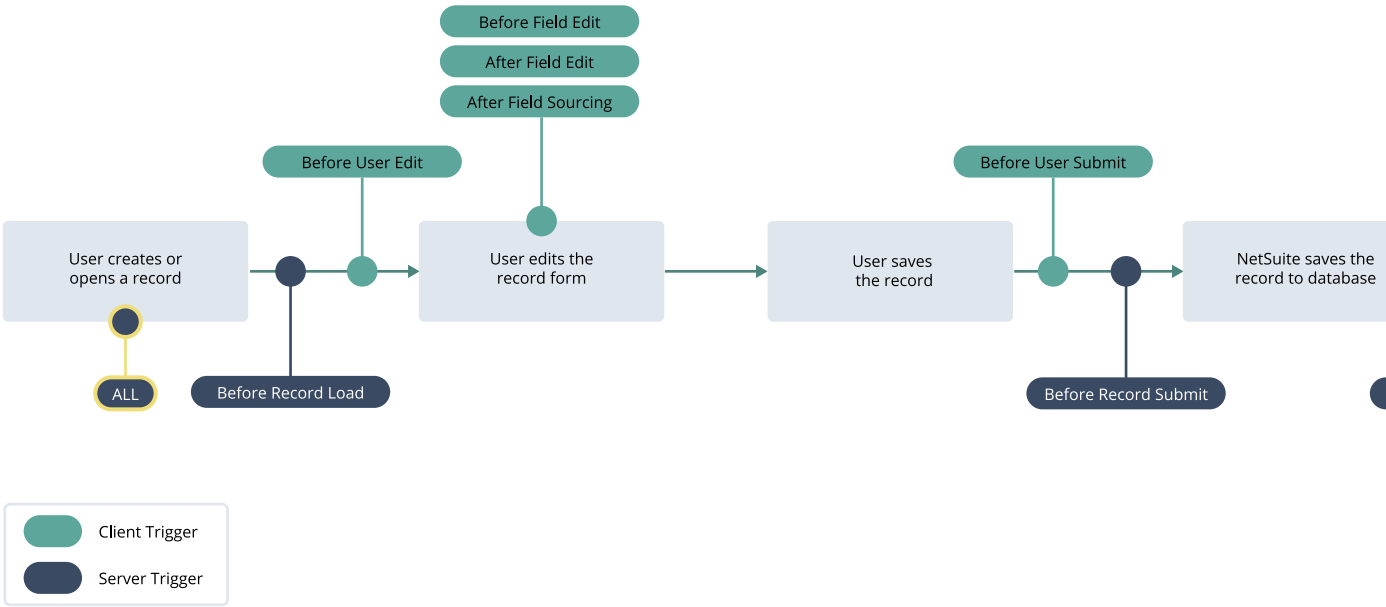
Use the following table to get more information about working with states in a workflow:

Task	For more information
State properties and adding a state to a workflow	Creating a State
Editing a state	Editing a State
Deleting a state	Deleting a State
Creating a state field	Creating and Using State Fields
Working with exit states	Exit States
Creating a non-exiting state	Non-Exiting Workflow States
View state reference information	States Reference

Workflow Triggers

Triggers are based on events that occur during the processing of a record in NetSuite and dictate when the workflow should perform certain tasks. NetSuite defines triggers for when a workflow should initiate, when actions should be performed, or when a record should transition to another state for the record, based on the processing of a record in NetSuite. You direct a workflow to respond to the record-processing events.

SuiteFlow includes two types of triggers, server triggers and client triggers:



The type of trigger you use in SuiteFlow depends on when you want a workflow to either initiate or complete a specific action or transition. For example, if you want to alert users to change a field before submitting, use a client trigger. If you want to notify them after submitting, use a server trigger. You can only start workflows on server triggers.

Limiting the actions a workflow does can help with managiong it. Picking the right trigger also helps workflows run better and reduces the chance of missing info. This is especially important for workflows that use client triggers, since they involve user interaction.

You can initiate a workflow or transition to another state on any of the server triggers or set up actions to run on the server and client triggers. The triggers supported for actions depend on the type of action. To understand the order in which triggers process for actions or transitions in a workflow state, see the SuiteFlow Trigger Execution Model.

Server Triggers

Server triggers occur when a record is read from or written to the NetSuite database or when a record enters or exits a state in a workflow. Server triggers are classified as either record based, workflow based, or time based.

- Record based triggers occur when something happens to the record:
  - The record is going to load (Before Record Load trigger)
  - After the record loads, but before it is saved (Before Record Submit trigger)
  - The record is saved (After Record Submit trigger)

- Workflow based triggers occur when something happens to the workflow
  - A state is entered (On Entry trigger)
  - A stated is exited (On Exit trigger)
- Time based triggers happen on a schedule you set (Scheduled trigger)

Workflows evaluate and execute all actions in a state for a specific server trigger before they evaluate and execute the transitions for that trigger.

The following table describes the server triggers and the type of workflow tasks to which they apply:

Trigger Name	Applies To	Description
Before Record Load	▪ Workflow initiation ▪ Actions ▪ Transitions	Triggers when a new record is created, before it's loaded into the browser, or before an existing record loads into the browser. ▪ **Actions.** Execute every time a record is loaded in a state. ▪ **Transitions.** Execute when a user loads a record. Use this trigger when setting default values on fields for the record form, hiding fields on the record form, or locking a record.
Before Record Submit	▪ Workflow initiation ▪ Actions ▪ Transitions	Occurs after a user clicks **Save** on a record and before NetSuite saves the record data to the database. ▪ **Actions.** Execute every time a user clicks **Save** when a record is in a state. ▪ **Transitions.** Execute after a user clicks **Save**. Use this trigger when validating record form fields or calculating field values before saving a record.
After Record Submit	▪ Workflow initiation ▪ Actions ▪ Transitions	Occurs after NetSuite saves the record data to the database. ▪ **Actions.** Execute after a record is saved to the database when a record is in a state. ▪ **Transitions.** Execute after a record is saved to the database. Use this trigger when sending an email that a record has been changed or when creating dependent records.
Scheduled	▪ Workflow initiation ▪ Actions ▪ Transitions	You can create a schedule for workflows to initiate, and for actions and transitions to execute.
Entry	▪ Actions ▪ Transitions	Occurs the first time that a workflow enters a state at the same time as the first server trigger*. ▪ **Actions.** Execute the first time a record enters a state. Workflows can enter a state multiple times. ▪ **Transitions.** Execute when a record enters a state. *On Entry triggers don't execute on their own. They execute at the same time as the first ordered server trigger for a state. For example, the On Entry trigger executes when the workflow enters a state simultaneously with the Before Record Load trigger.
Exit	▪ Actions	Occurs when a workflow exits a state and transitions to another state.
ALL	▪ Workflow initiation	For workflow initiation only. The workflow initiates on any triggering event.

Note: The Scheduled trigger is considered a server trigger. However, scheduled actions and transitions are not directly associated with user events such as loading or saving a record. Scheduled actions and transitions are automatically initiated by NetSuite, based on user-defined time increments. For more information, see Scheduled Trigger and Initiating a Workflow on a Schedule.

Client Triggers

Client triggers execute when a user interacts with a record form in NetSuite. You can view the client triggers used for actions for a specific workflow state under **Form Event** on the **State** subtab of the context panel.

The following table describes the client triggers:

Trigger Name	Description
Before User Edit	Executes when the record form loads into the browser. Use this trigger to make changes to the record form in the browser before the user edits any field.
Before Field Edit	Executes when user tabs or clicks away from a field after entering a value. Use this trigger when validating the value of a record field.
After Field Edit	Executes when a user enters or changes the value of a field. Use this trigger when dynamically updating the values of other fields when a user changes the value of a specific field.
After Field Sourcing	Executes after a field change, after all of the child field values for the field are sourced. Use this trigger when setting field values based on other sourced values.
Before User Submit	Executes every time a user clicks **Save** when the form is in the state. The actions execute in the browser, before any data is sent to the NetSuite database and the save operation occurs. Use this trigger when validating record form field values.

More Information About Server and Client Triggers

Use the following table to get more information about working with server and client triggers:

Task	For more information
Understanding the SuiteFlow trigger execution model	SuiteFlow Trigger Execution Model
Get a description of each trigger type, including examples	Triggers Reference
View which triggers did or didn't execute	Workflow Execution Log
Using triggers for workflow initiation	Workflow Initiation
Using triggers for actions	Action Triggers
Using triggers for transitions	Transition Triggers

SuiteFlow Trigger Execution Model

When a record enters a state in a workflow, the workflow runs actions and transitions in this order:

1. Actions and transitions with an Entry trigger execute. The actions only execute the first time a record enters a state. Then the transitions execute.
2. Actions for the trigger on which the record entered the state execute.
3. If applicable, transitions for the trigger on which the record entered the state are evaluated and executed.
4. If the record transitions to another state, actions with a trigger of Exit execute before the record transitions to the next state.

The table below shows the general order of trigger execution for actions and transitions, depending on what the user does and which trigger brought the record into the state.

Record Action	Trigger	Actions	Transitions*
User creates or opens a record.	Before Record Load	1. Actions set to trigger on Entry execute the first time the record enters the state. 2. Actions set to trigger on Before Record Load execute.	1. Transitions set to trigger on Entry execute. 2. Transitions set to trigger on Before Record Load execute.
Record loads into the browser.	Any client trigger	If applicable, actions set to a client trigger execute.	None. Transitions do not execute on client triggers.
User clicks **Save** on the record.	Before Record Submit	Actions set to trigger on Before Record Submit execute.	Transitions set to trigger on Before Record Submit execute.
	After Record Submit	Actions set to trigger on After Record Submit execute.	Transitions set to trigger on After Record Submit execute.
*** Note:** Transitions with no **Trigger On** value (blank trigger) execute as soon as their conditions are met.			

For example, if the record enters the state on the Before Record Load trigger, actions set to trigger on Entry and all the subsequent triggers may execute, depending on the state layout.

But if the record enters the state on the Before Record Submit trigger, only actions set to trigger on Entry, Before Record Submit, and After Record Submit execute. Actions and transitions for the Before Record Load trigger and any client triggers don't execute. For more information, see Initiating or Entry Trigger Rules.

Initiating or Entry Trigger Rules

To understand the SuiteFlow trigger execution model, you need to know which trigger initiates the workflow and which trigger brings a record into a state:

- **Trigger on which a workflow initiates.** When a workflow initiates, it begins executing the server triggers in the following order, starting with the trigger on which the workflow initiated:
  - Before Record Load
  - Before Record Submit
  - After Record Submit

  If a workflow initiates on an ALL or Before Record Load trigger, the workflow instance executes the Before Record Load trigger first, then the Before Record Submit and After Record Submit triggers after the user saves the record. If a workflow instance initiates on a Before Record Submit trigger, the Before Record Load trigger never executes.

  For more information about initiating a workflow, see Workflow Initiation.
- **Trigger on which a workflow enters a state.** The trigger on which a record enters a state depends on the server trigger that the workflow instance is currently executing.

For example, if a workflow executes actions in a state for the Before Record Submit trigger and then moves to another state, the next state is entered on Before Record Submit. Any actions or transitions in that state set to Before Record Load won't execute.

You can view these triggers and their order of execution in the Workflow Execution Log.

Workflow Trigger Execution Example

Let's say you create a workflow to make a sales order field required, validate its value, and then send an email to the user's supervisor after saving. You set the workflow to execute when a sales order is created and to trigger on Before Record Load.

The following table describes the states in the workflow:

State Name	Description
State 1 Entry	Contains an action and a transition. The action triggers on Entry and makes a field required on the record form. The transition triggers on Before Record Load and transitions to State 2.
State 2 Field Validation	Contains an action to validate the value of the field when the user modifies it. Contains a transition that triggers on Before Record Submit and transitions to State 3.
State 3 Send Email	Contains an action that triggers on After Record Submit and sends an email that notifies the user's supervisor that the sales order was entered.

The workflow instance executes as follows:

1. The workflow instance initiates when the user creates the sales order record and enters the entry state, State 1 Entry.

   The server trigger on which the record enters the state is Before Record Load.
2. The workflow instance executes actions set to trigger on Entry and marks the field as required. Then, the workflow instance executes the Before Record Load trigger, executes the transition, and the record enters State 2 Field Validation.
3. The server trigger on which the record enters the state is still Before Record Load.

   The workflow instance executes the client trigger when the user edits the required field and makes sure the field has the correct value. The user clicks **Save** and the Before Record Submit trigger executes and the record transitions to State 3 Send Email.
4. The record enters State 3 Send Email on the last trigger that executed, Before User Submit. The workflow instance then executes the next server trigger, which is After Record Submit. The send email action executes and the workflow completes.

Rules and Guidelines for Workflow Triggers and Trigger Execution

Use the following rules and guidelines when working with workflow triggers:

- Make sure actions set to execute on the Entry trigger are valid for the current server trigger.

  If an action executes on the Entry trigger, the action must be able to be executed on the current server trigger for the state. For example, a state contains a Send Email action set to execute on the Entry trigger and the record enters the state on the Before Record Load server trigger. However, the Before Record Load trigger is not a valid trigger type for the Send Email action. Consequently, the Send Email action does not execute.

  You can see which server triggers are valid for an action by viewing the **Trigger On** property for the action. You can also view the help for the action. For a list of all actions, see Workflow Actions Overview.
- Don't add actions to Exit states for any triggers other than the trigger on which the record enters the state.

Exit states are indicated in the workflow diagrammer. Exit states only execute actions associated with the trigger on which the record entered the state. For example, if a record enters the final state in a workflow on a Before Record Load trigger, actions set to execute on a Before Record Submit or a After Record Submit trigger do not execute. For more information, see Exit States.

- If a user reloads the record when a record is in a state, NetSuite executes the server triggers again, starting with the Before Record Load trigger. Actions set to execute on Entry do not execute again.

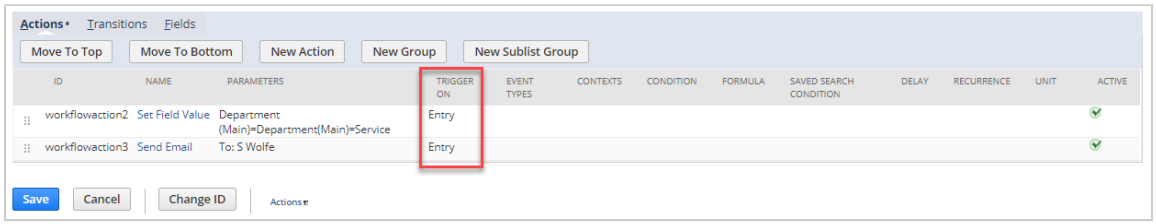
Workflow Actions

Actions are specific tasks performed by a workflow instance based on the properties of a record. You can use actions in workflows to change fields on a record, add or remove buttons, create new records, send email, and more. After you create a state, you choose the actions you want to execute when the record is in that state. When a record enters a state in a workflow, the workflow instance executes the actions depending on their triggers.

Each action has its own set of parameters, depending on the action type. All actions contain the following elements:

- Action properties. Properties common to most action types. See Action Properties.
- Trigger. The trigger determines when an action executes. See Action Triggers.
- Conditions. The condition determine the additional requirements that must be met for an action to execute. See Action Conditions.

The following screenshot shows two actions that have been added to a state. Both actions are set to execute on the Entry trigger, or when the record in the workflow enters that state. When the record enters the state, the **Department** field is set to **Service** and an email is sent to the supervisor of the sales rep.



Note: For a list of all actions available in SuiteFlow, see Workflow Actions Overview.

More Information about Actions

After you create an action, you can move or copy it to another state, reorder the actions on the **Actions** subtab, inactivate the action, and create action groups.

If the Show Internal IDs preference is enabled on your account, you can see the internal IDs for workflow actions in the following locations:

- Workflow Execution Logs
- Workflow Context Panel
- Workflow Action Group Window

You can use the workflow action IDs to quickly identify every executed action in context and troubleshoot workflows. For more information about the Show Internal IDs preference, see the help topic Setting the Show Internal IDs Preference.

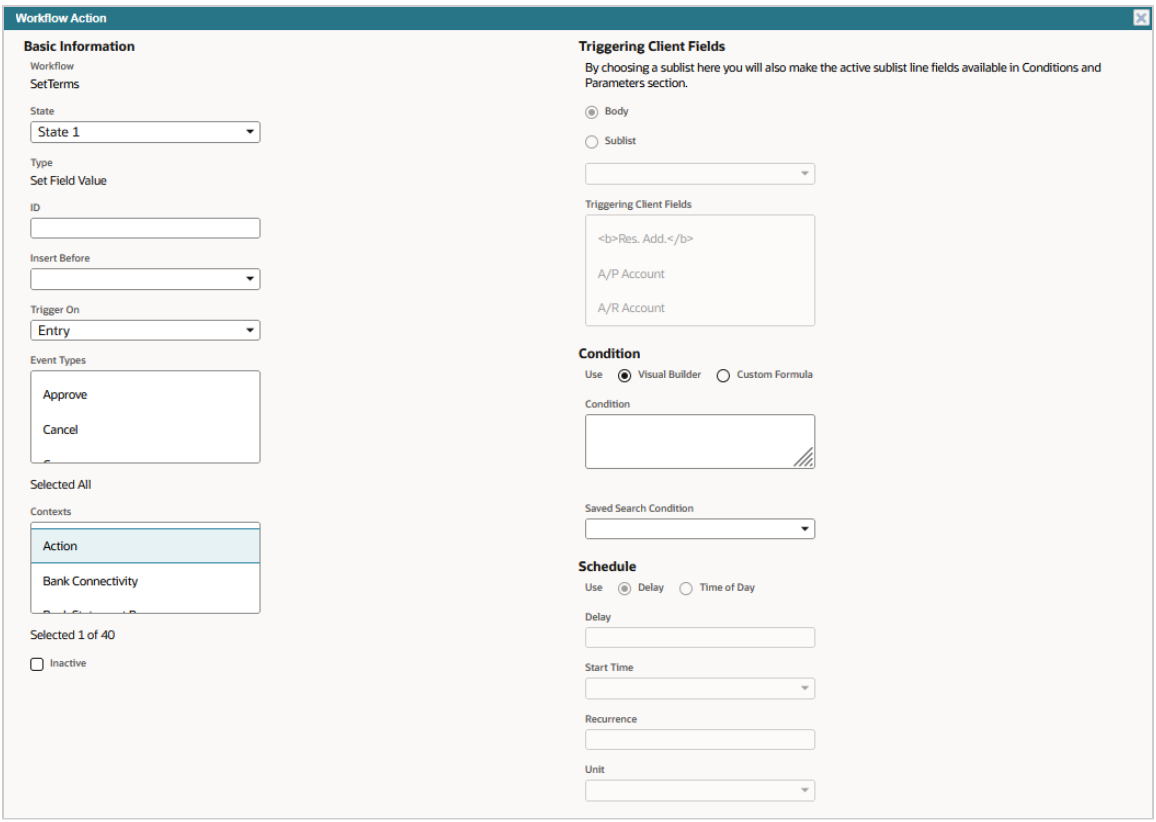
Use the following table to get more information about working with actions in a workflow:

Task	More information
Creating, editing, and deleting actions	Working with Actions
Get more information about action triggers and conditions	Action Triggers and Action Conditions
Get a list of all actions	Workflow Actions Overview
Scheduling an action	Scheduling an Action
Creating action groups	Using Action Groups
Moving and copying actions	Moving an Action
Using actions to accomplish specific tasks	Action Examples, including the following examples: ▪ Using Buttons to Run Transitions ▪ Using Buttons for Navigation ▪ Executing an Action with a Saved Search Condition ▪ Using Conditional Fields with Actions ▪ Setting Field Values in Action Definitions

Action Properties

Each action type in SuiteFlow has its own specific parameters. For example, the Send Email action lets you define the sender and recipient. Most actions also have common properties you use to define how the action executes in the state where you create it.

The following screenshot shows the Send Email action properties:



Note: For more information about each of these properties, see Creating an Action and Scheduling an Action.

Action Triggers

When a workflow instance is triggered, it always executes the actions of the current state and with the appropriate trigger(s), in order. When actions of the current state are executed, the workflow instance considers all transitions from the current state of the appropriate trigger(s), respecting their order. The first transition matching all its conditions is executed. Next, the workflow moves to the target state and continues executing actions of the target state in the same way. The workflow proceeds executing in this manner if possible. When no more relevant transitions exist, the execution session started by the original executing trigger is finished. If the workflow is in a state which has no transitions and the state is marked as Do Not Exit, the entire workflow instance is finished. Otherwise, the workflow is dormant until another trigger reactivates it.

There is no fixed order for the execution of triggers. The workflow definition and events happening on the record (load, view, save, etc.) determine when a trigger is executed.

SuiteFlow triggers are either server side or client side:

- Client side triggers execute in the web client when a user edits the record.

  Client side triggers execute in the following situations:

  - Before User Edit — when the record loads into the browser, before any changes are made to the form.
  - Before Field Edit — before a user completes changes to a field on a record form.
  - After Field Edit — after a user completes changes to a field on a record form.
  - After Field Sourcing — after all dependent field values on a record have been populated.
  - Before User Submit — after a user clicks **Save** on the record, before the Before Record Submit trigger executes.
- Server side triggers execute in the following situations:
  - On Entry — when the record enters the state.
  - On Exit — when the record exits the state.
  - Before Load — before the record is loaded.
  - Before Submit — before the record is saved to the database.
  - After Submit — after the record is saved to the database.
  - Scheduled — when the scheduler executes the workflow based on its schedule definition. For more information, see Scheduling an Action.

Server side triggers can be further classified as follows:

- Record based triggers — execute when something happens on the record — it loads, it is going to be saved, it was saved.
- Workflow based triggers — execute when something happens on the workflow — a state is entered or exited.
- Time based triggers — execute when the scheduled time is reached.

There are a few rules regarding the order or trigger execution:

- When a record is going to be viewed by the user, It executes the Before Load trigger when loading the record.

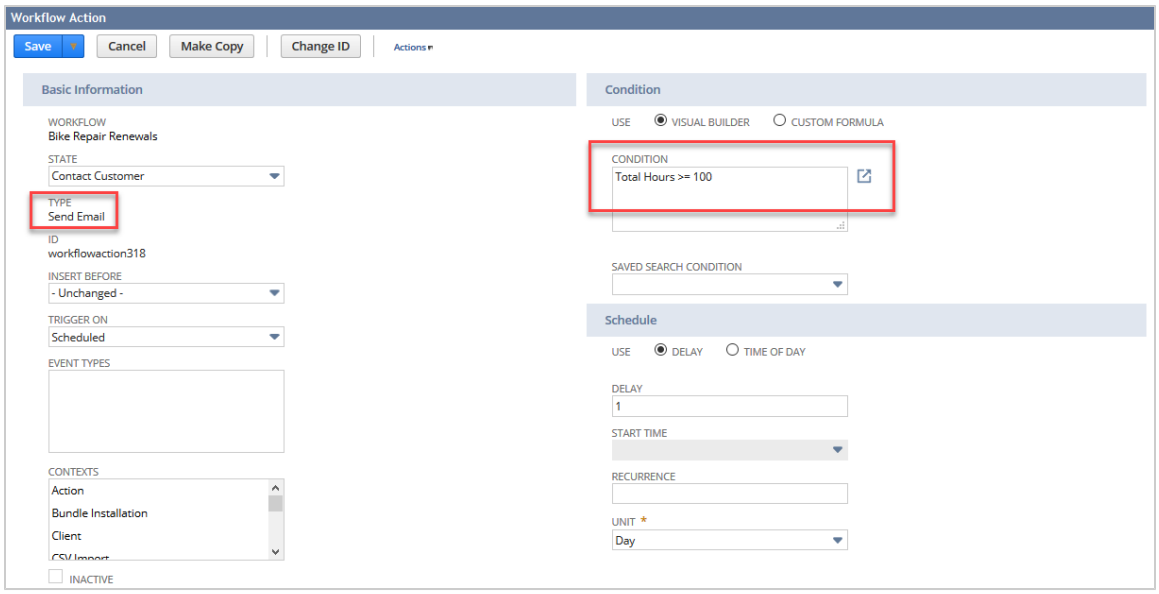
- When a record is going to be edited by the user, it first executes the Before Load trigger when loading the record, then, if the user saves the changes, it executes the Before Submit and After Submit triggers.
- When a workflow moves from state A to state B, it first executes On Exit on state A, then it executes On Entry on trigger state B.
- On Entry triggers do not execute on their own. They execute at the same time as the first ordered server trigger for a state, for example, the On Entry trigger executes when the workflow enters a state simultaneously with the Before Record Load trigger.

Action Conditions

Actions can execute based on a condition. If an action has a condition associated with it, the action executes only if the condition is met. You can create conditions using the Condition Builder or using custom formulas.

If you want to create multiple actions with the same set of conditions, you can use action groups. For more information, see Using Action Groups. For more information about conditions, see Workflow Conditions.

The following screenshot shows a Send Email action that will execute in one day from the time the record enters the state, if the **Total Hours** field on the record is equal to or greater than 100:



Important: If an action executes on a client trigger, a custom formula must be in SuiteScript. If an action executes on a server trigger, a custom formula must be in SQL.

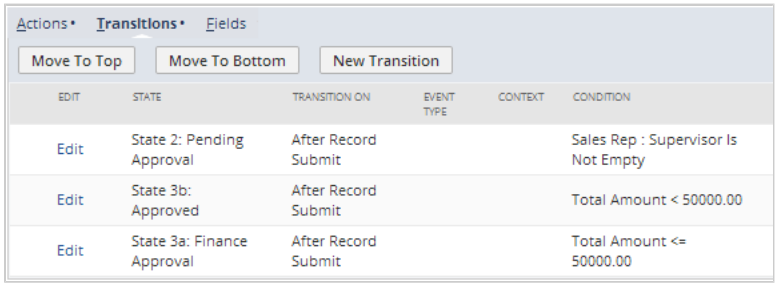
Workflow Transitions

A transition moves the record in the workflow into another state. A state can contain multiple transitions, with each transition having its own condition. A workflow instance executes the first transition that meets the transition condition and the record in the workflow moves to the specified state.

Each transition has the following elements:

- Transition properties. Properties common to all transitions. See Transition Properties.
- Trigger. The trigger determines when a transition executes. See Transition Triggers.
- Conditions. The condition determine the additional prerequisites that must be met for a transition to execute. All conditions must be satisfied to execute the transition. See Transition Conditions.

The following screenshot shows the **Transitions** subtab for a workflow state that contains three transitions. The first condition that evaluates to true executes.



More Information About Transitions

Use the following table to get more information about working with actions in a workflow:

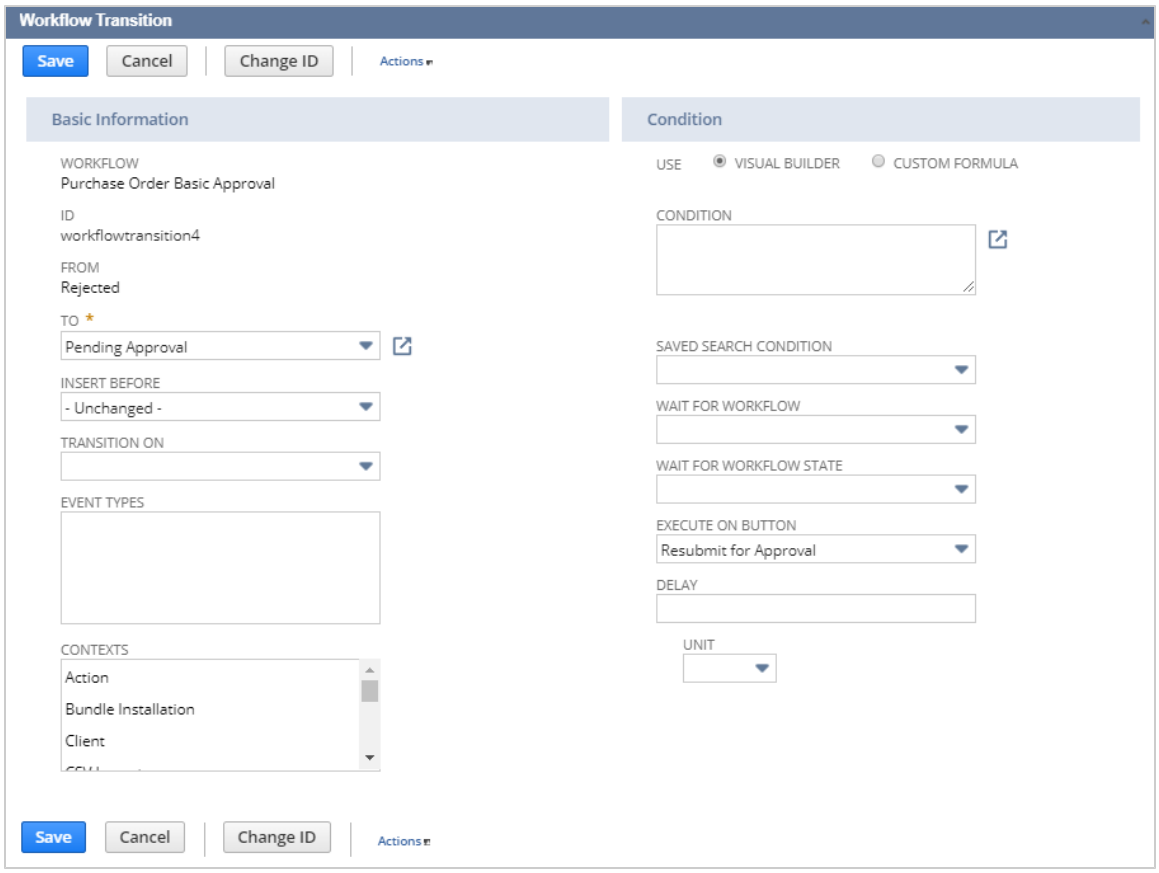
Task	For more information
Creating, editing, and deleting transitions	Working with Transitions
Get more information about transition triggers and conditions	Transition Triggers and Transition Conditions
Scheduling a transition	Scheduling a Transition
Using transitions to accomplish specific tasks	Transitions Examples Includes the following examples: ▪ Using Buttons to Run Transitions ▪ Blank Transition Trigger ▪ Executing a Transition with a Saved Search Condition ▪ Specifying States for Child Workflow Transitions

Transition Properties

Use the transition properties to define when a transition executes. You can create a transition in the diagrammer or from an existing state in a workflow.

You can access the properties for an existing transition by clicking a transition in the diagrammer and clicking the **Edit** icon on the **Transition** tab on the context panel.

The following screenshot shows the workflow transition properties:



Transition Triggers

The optional trigger type you select for the **Trigger On** property of a transition determines when the transition executes.

The following table lists the valid transition trigger types:

Trigger Type	Description
Entry	The transition only executes when the record first enters the state.
Before Record Load	The transition executes before the record loads into the browser.
Before Record Submit	The transition executes after the user clicks **Save** on the record and before NetSuite writes the record data to the database.
After Record Submit	The transition executes after NetSuite writes the record data to the database.
Scheduled	The transition executes after the record enters the state and meets the defined schedule properties. See Scheduling a Transition.
Blank	The transition executes as soon as the conditions of the transition are met. For more information about leaving the transition trigger blank, see Blank Transition Trigger.

Transition Conditions

You can create different types of transitions, depending on their conditions. Besides using the Condition Builder or custom formulas, you can also use **Saved Search**, **Workflow** and **State**, **Button**, and **Delay** and **Unit** properties to set when a transition executes.

> **Note:** If you define multiple conditions for a transition, all the conditions must evaluate to true for the transition to execute.

The following table describes the transition conditions:

Transition Condition	Description
Condition built with Condition Builder	Use the Condition Builder to create a transition condition. For information about the Condition Builder, see Defining a Condition with the Condition Builder.
Custom formula	Conditions built using formula values that are evaluated when the workflow instance runs. For more information about custom formulas, see Defining a Condition with Formulas.
Saved search	Use a saved search as a condition for transition execution. The transition executes if the current record in the workflow meets the criteria in the saved search. For more information, see Executing a Transition with a Saved Search Condition.
Transition on button click	Transition to another state based on the click of a button on the current record. You must add the button with the Add Button action before you can select it in this dropdown list. For more information, see Using Buttons to Run Transitions.
Transition based on another workflow or workflow state	Use the completion of another workflow or another workflow state as a condition for a transition. For more information, see Specifying States for Child Workflow Transitions.
Schedule a transition	Schedule a transition to execute on a delayed period of time after the record enters the state. For more information, see Scheduling a Transition.

Workflow Conditions

You can use conditions to specify a criteria for workflow initiation, and action and transition execution. Conditions can be basic field/value comparisons or formulas. Use these conditions to restrict for whom, when and on which record instances a workflow initiates or actions and transitions execute. You can create conditions by using the **Condition Builder** or a **Formula**.

More Information About Conditions

Get more information about working with conditions in a workflow:

Task	For more information
Creating conditions with the Condition Builder	Defining a Condition with the Condition Builder
Creating conditions with the Formula Builder	Defining a Condition with Formulas

Task	For more information
Using conditions with transitions	Transition Conditions
Using conditions with actions	Action Conditions
Examples of using conditions	Condition Examples, including: ▪ Referencing Old Record Values in a Workflow ▪ Defining Conditions for Customer Credit Hold Field

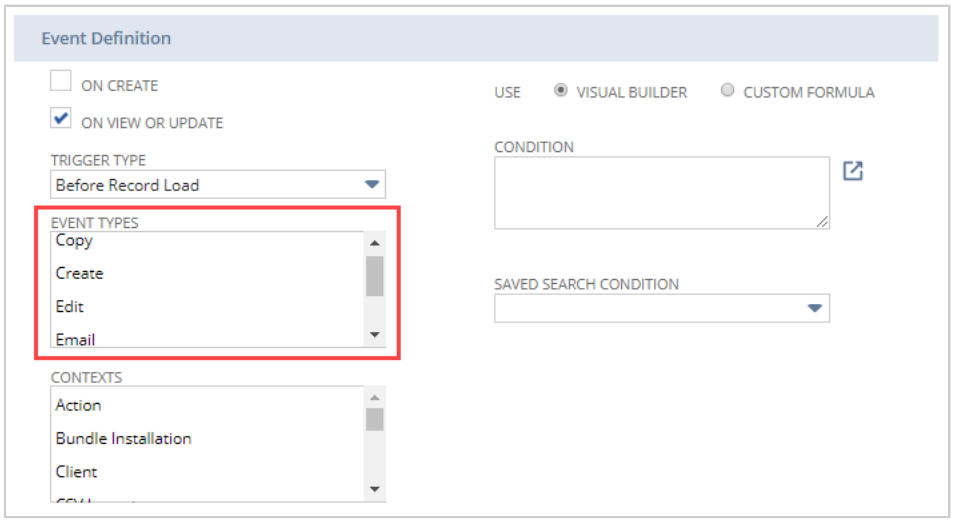
Workflow Event Types

You can define workflows to initiate or execute actions and transitions on specific event types. You can direct workflows to initiate when records of the base record type are created, updated, or viewed with the **On Create** and **On Update** event types.

SuiteFlow includes additional event types with the **Event Types** field on the workflow definition, action, and transition definition pages. These events represent the user interface activity used to create, view, or update the record for a workflow.

Use these event types to narrow down exactly when workflows start or when actions and transitions run. For a full list, see Event Types Reference.

The following screenshot shows the **Event Types** field on the workflow definition page:



The Workflow Manager automatically fills in the event types you can select in the **Event Types** field. The following table describes the criteria for including an event type in the field:

Criteria	Description
Server trigger	The Workflow Manager displays different event types based on the server trigger, which includes Entry and Exit for actions and transitions in a state. For example, the Before Record Load trigger type and the **View** event type are compatible. The only time you can view a record is when it loads into the browser. However, if you set the workflow to initiate on the After Record Submit trigger, the **View** event type is not available as an event type. See Event Types Reference for information about the relationship between server triggers and event types.

Criteria	Description
Base record type	Some events are specific to a record type. For example, the Mark Complete event type will appear in the **Event Types** field only if the workflow base record type is Task or Phone Call. Other event types may appear depending on the features enabled in the account. For example, you must have the Pick, Pack, and Ship feature enabled to see Pack and Ship event types on an Item record such as Item Fulfillment.

Rules and Guidelines for Event Types

Use the following general rules and guidelines with event types:

- The **Event Types** field isn't available for actions that execute on a client trigger or the Scheduled trigger for workflow initiation or action or transition execution.
- The Workflow Manager doesn't limit all incompatible relationships between **On Create** and **On Update** and the corresponding events in the **Event Types** field.

  For example, you can use the View event type for workflow initiation. However, the view event only occurs if the record opens in view (read-only) mode, rather than in edit mode. Consequently, if you define the workflow to only initiate on the creation of a record and select the View event type, the view event never occurs and the workflow never initiates.

More Information About Event Types

Use the following table to get more information about working with event types in a workflow:

Task	For more information
Specify the event type in a workflow definition	Creating a Workflow
Specify the event type in an action or transition	Creating an Action and Creating a Transition
Get a list of all event types and when they are available	Event Types Reference
Get examples of using the Print, Mark Complete, and Drop Ship event types	Examples of Event Types

Execution Contexts and Workflows

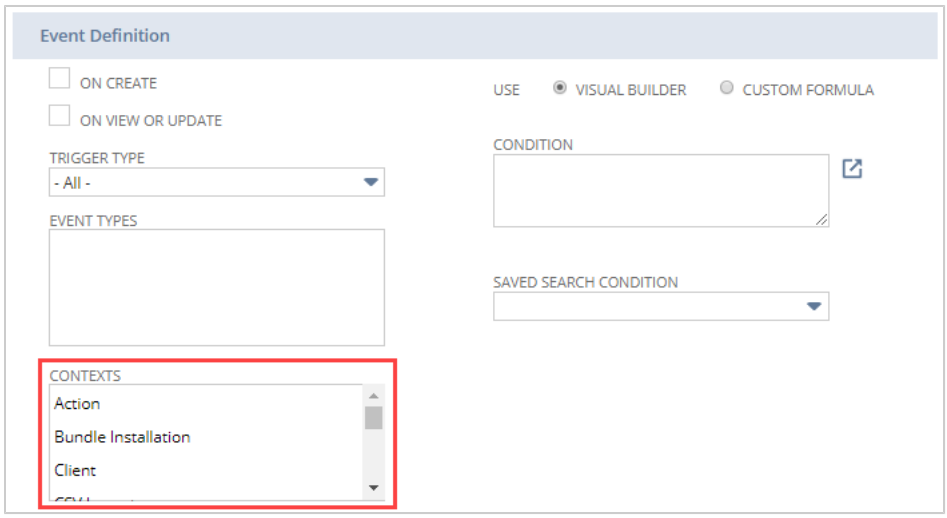
Execution contexts tell you how or when a SuiteScript script or SuiteFlow workflow gets triggered. For example, a script might execute because of something in NetSuite, or because of something else, like a web services integration. You can use execution context filtering to make sure your scripts or workflows only run when needed.

You can specify that a script or workflow should execute only in certain contexts, which can improve performance in contexts where the script or workflow isn't required. You can also determine the execution context for a running script programmatically and use different logic depending on the context. For more information about execution contexts, see the help topic Execution Contexts.

There are many execution contexts available in NetSuite. For a full list of execution contexts, see the help topic Execution Context Types.

Set the context for workflow initiation, actions, and transitions using the **Contexts** field on the workflow, action, or transition definition pages.

The following screenshot shows the **Contexts** field on the workflow definition page. This workflow doesn't initiate unless a sales order is created on the Web Store:



More Information About Execution Contexts

Use the following table to get more information about working with context types in a workflow:

Task	For more information
Specify the context type in a workflow definition	Creating a Workflow
Specify the context type in an action or transition	Creating an Action and Creating a Transition
Get a list and description of all context types	Execution Context Types
Get examples of using the CSV Import, User Event Script, and Custom Mass Update context types	Context Type Examples

Workflow Custom Fields

Important: Workflow Custom Fields and Workflow State Custom Fields cannot be successfully used in client-side actions and conditions.

Custom fields are variables you can use in workflows to collect and track data for a workflow instance or a state. Each type of custom field is defined by its scope within the workflow.

SuiteFlow includes the following custom field types:

Custom Field Type	Application
Workflow Field	Workflow fields are tied to a single workflow and can store a unique value for each workflow instance. You can use them in any state, in workflow conditions, and in actions like Set Field Value. Workflow fields show up on the **Fields** subtab of the workflow definition page or in the Fields view in the context panel.

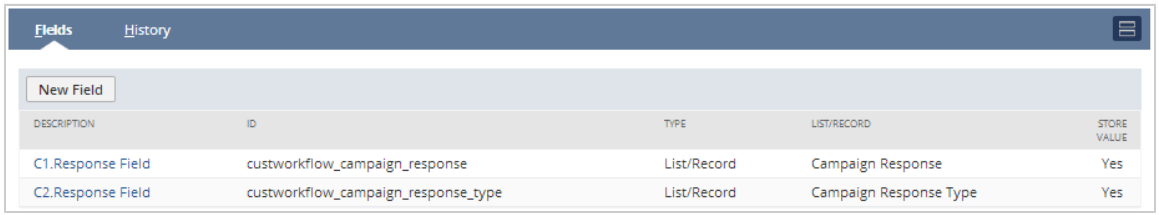
Custom Field Type	Application
	You can store the value of the field in the database or store the value until the workflow instance completes. If you don't check the **Store Value** box, the database doesn't save the field value and the value will only be accessible in the current workflow instance. Use workflow fields in the following situations: ▪ Track records created by the Create Record action. Assign the new record to an workflow field and subscribe to the record, using the workflow field, with the Subscribe To Record action. See Create Record Action. ▪ Store a return value from a custom action script in a workflow field. See Storing a Return Value from a Custom Action Script in a Workflow Field. For more information about creating and using a workflow field, see Creating and Using Workflow Fields.
State Field	State fields work just like workflow fields, but they only apply to the state where you create them. State fields show up on the **Fields** subtab of the Workflow State window or in the Fields view for a state in the context panel. You can store the value of the field in the database or store the value until the workflow instance completes. For more information about creating and using a state field, see Creating and Using State Fields.

Note: You can also create workflow definition fields that apply to all workflows in a NetSuite account. To create a workflow definition field, use Customizaton to create an **Other Record Field** of type **Workflow**. After you create the field, the field appears on the workflow definition page for all workflows in the account. For more information, see the help topic Creating a Custom Field.

Use these fields to collect or track data across all workflows in an account. You can also use the field as search criteria when you perform a workflow search.

Sample Workflow Field

The following screenshot shows workflow fields used to track campaign responses in a lead nurturing workflow:



Workflow Revisions

Important: Workflows created prior to 2017.2 are listed as revision number 0. Subsequent changes made to existing workflows increase the revision number.

Workflow revisions let you see when changes have been made to a workflow.

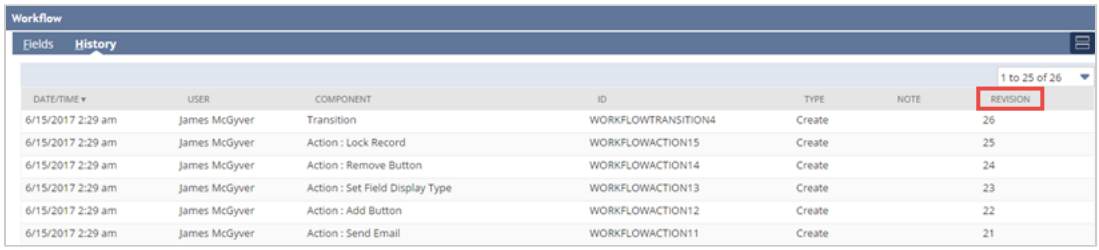
Workflow revisions begin after a workflow is created. When a workflow is created, its initial revision number is 1. The addition of a state is considered to be revision 2. The two simultaneous creation events cause the workflow revision to be listed as 2. Subsequent changes increase the revision number by 1. For example, adding a custom workflow field or adding an action would each increase the revision number by 1. Any change made to a workflow's definition or any of its children also increase its revision number.

For more information about tracking workflow revisions, refer to the following sections:

- Workflow Revisions on the History Subtab
- Workflow Revisions on the Workflows List Page
- Workflow Revisions in Searches

Workflow Revisions on the History Subtab

You can track workflow revisions on the Workflow Definition Page History subtab, in the Revision column.



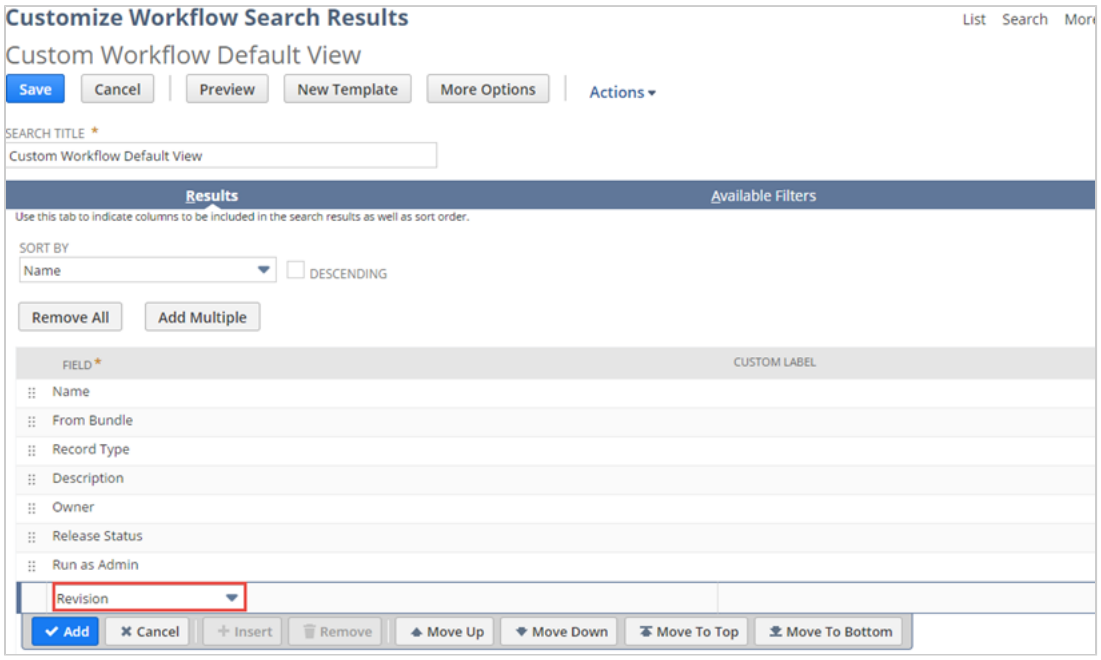
DATE/TIME	USER	COMPONENT	ID	TYPE	NOTE	REVISION
6/15/2017 2:29 am	James McGyver	Transition	WORKFLOWTRANSITION4	Create		26
6/15/2017 2:29 am	James McGyver	Action : Lock Record	WORKFLOWACTION15	Create		25
6/15/2017 2:29 am	James McGyver	Action : Remove Button	WORKFLOWACTION14	Create		24
6/15/2017 2:29 am	James McGyver	Action : Set Field Display Type	WORKFLOWACTION13	Create		23
6/15/2017 2:29 am	James McGyver	Action : Add Button	WORKFLOWACTION12	Create		22
6/15/2017 2:29 am	James McGyver	Action : Send Email	WORKFLOWACTION11	Create		21

The following changes increase the workflow revision and are listed on the Workflow Definition Page History subtab:

- Creating or changing a workflow definition.
- Creating, changing, or deleting a workflow state.
- Moving a state on the Workflow Diagrammer.
- Creating, changing, or deleting a workflow transition.
- Creating, changing, or deleting any workflow actions or action groups.
- Creating, changing, or deleting Workflow Custom fields and Workflow Custom State fields.
- Creating, changing, or deleting a workflow condition.
- Changing the script ID of any workflow component increases the revision and sets the note to “{1} changed to: {2}” where {1} is the old id and {2} is replaced with the new ID.
- Bundle updates or installs increase the revision. The entry to history remains the same: “Workflow has been modified by bundle {1}” where {1} is replaced by the bundle ID.
- Changing the release status or logging on the workflow definition of a workflow locked by a bundle adds the note of what changed.
- From the Workflows list page, setting the workflow to inactive or active increases the revision and logs a note “set to {1}” where {1} is replaced with the new value.

Workflow Revisions on the Workflows List Page

You can view a workflow’s revision number on the Workflows list page by customizing the page to include the new **Revision** column.

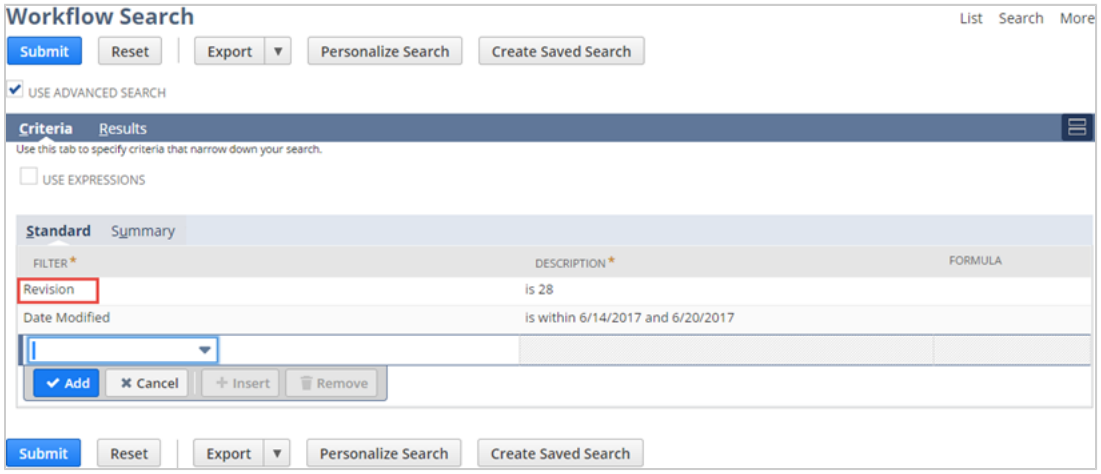


To add the Revision column to the Workflows list page:

1. Go to Customization > Workflow > Workflows.
2. Click **Edit View**.
3. From the **Field** list, select **Revision**, then click **Add**.
4. Click **Save**.

Workflow Revisions in Searches

You can search for workflow revisions by creating an advanced workflow definition search and adding the Revision column as a Standard Filter. For details, see Workflow Definition Search.



Workflow Initiation

For all workflows, you must specify when NetSuite initiates an instance of the workflow. You can set a workflow to initiate based on an event or based on a schedule.

If a workflow initiates based on an event, the workflow runs when a record of the base record type is created or updated. If a workflow initiates on a schedule, the workflow runs at the date and time in the schedule, against a set of records that meet criteria defined in a saved search.

A workflow must include at least one state before it initiates. Whenever a workflow initiates, NetSuite creates a new instance of the workflow. Multiple instances of the same workflow can be running simultaneously on different records.

You specify when the workflow initiates on the workflow definition page:

- **Based on an event.** The workflow executes when a user creates or updates a record of the base type, and it runs against each new or updated record. For example, a lead nurturing workflow starts when a Sales Rep creates a Lead record, and runs on that new record.

  For more information, see Initiating a Workflow on an Event.
- **Based on a schedule.** The workflow executes on a recurring basis at defined time intervals, or on a one-time basis at a specific day and time. The workflow runs against records that are returned as results of a selected saved search. For example, you can create a workflow that runs every month and uses a saved search to find customers with at least one sales order, and sends the customer a welcome email.

  For more information, see Initiating a Workflow on a Schedule. To test a scheduled workflow, you can execute it on demand.

Typically, you specify workflow initiation on the workflow definition page. However, you can also initiate a workflow in one of the following ways:

- Using SuiteScript. Use SuiteScript to programmatically initiate a workflow on-demand against specific records. You must first create the workflow on the workflow definition page and then use SuiteScript to initiate the workflow. For more information, see Using SuiteScript to Initiate a Workflow.
- Using the Initiate Workflow action. Run another workflow from within the current workflow. For more information, see Initiate Workflow Action.

Initiating a Workflow on an Event

To initiate a workflow instance on an event, select **Event Based** under **Initiation** on the workflow definition page and then select one or both of the following events for the workflow base record type:

- **On Create.** Initiate an instance of the workflow when the record is created.
- **On Update.** Initiate an instance of the workflow when the record is viewed or updated.

You must also select the server trigger type for workflow initiation. See Workflow Initiation Triggers.

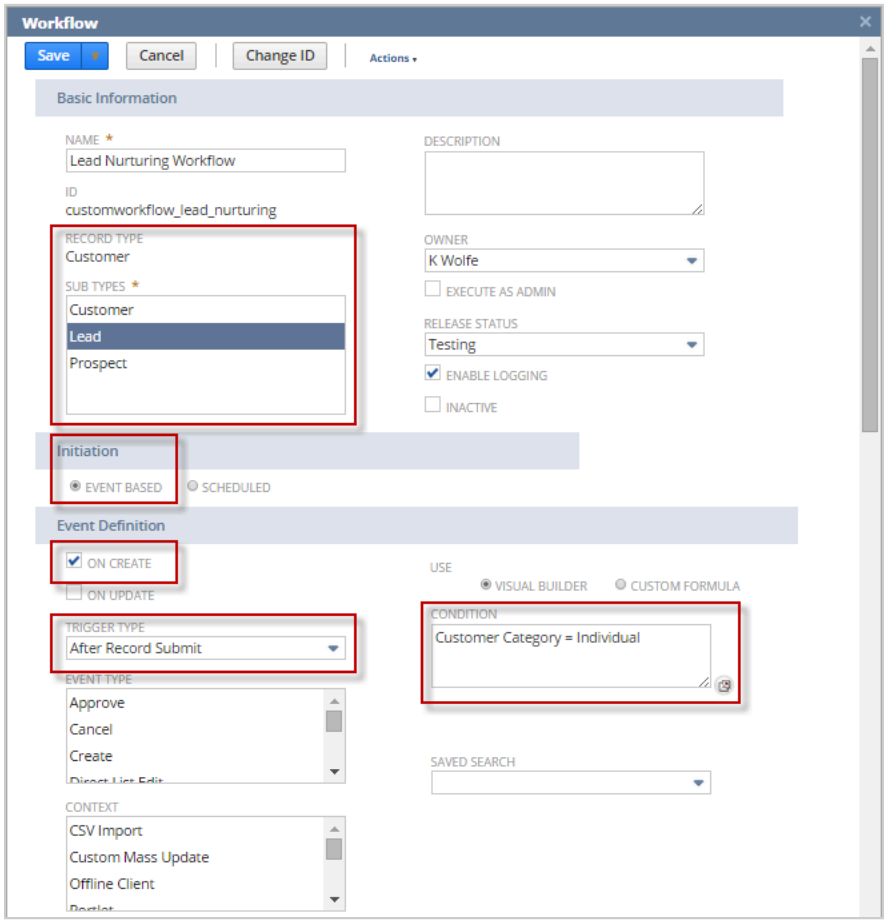
The following table describes optional requirements that you can use to further define when a workflow instance initiates:

Option	Description
Event Types	User interface activity used to create, view, or update the record. The trigger type determines which event types are available. See Workflow Event Types.
Contexts	NetSuite functionality or feature used to create, view, or update the record. See Execution Contexts and Workflows.

Option	Description
Condition	Use the Condition Builder or Formula Builder to define requirements that must be met for a workflow instance to initiate. See Workflow Conditions.
Saved Search	Initiate the workflow if the record for the workflow meets the criteria in the saved search. The saved search must run on the same record type as the base record type for the workflow. The saved search must also include at least one filter set on the **Criteria** subtab for the saved search.

For example, you can create a lead nurturing workflow to run when a record is created and saved. Select **On Create** for the event based initiation and select the **After Record Submit** trigger. You can also create a condition so the workflow instance only runs on lead records with customer category of **Individual**.

The following screenshot shows the lead nurturing workflow:



Workflow Initiation Triggers

For a workflow to initiate on a create or update event on a record, you must also set the initiation trigger type in the **Trigger Type** dropdown list.

The following table describes when the workflow initiates for each trigger type:

Trigger Type	Description
- All -	The workflow initiates for any triggering event. For example, the workflow initiates when a record is viewed because the Before Record Load trigger executes when the record is viewed.

Trigger Type	Description
	Best practice is to choose a more specific trigger type for workflow initiation because the workflow initiates for any action on the record with this trigger.
Before Record Load	The workflow initiates and the record goes into the entry state when you load a record by clicking **New** or **Edit**, or when you view the record.
Before Record Submit	The workflow initiates and the record goes into the entry state after you click **Save** on the record and before NetSuite writes the record data to the database.
After Record Submit	The workflow initiates and the record goes into the entry state after the NetSuite writes the record data to the database.

Note: For more information, see Server Triggers and SuiteFlow Trigger Execution Model.

Initiating a Workflow on a Schedule

When you set up a workflow to run on a schedule, the workflow executes on the results of a saved search. You can schedule the workflow to run one time, run every 30 minutes, or run at a certain time on a daily, weekly, monthly, or yearly basis. When you choose to initiate workflows on a scheduled basis, you select a saved search and then define the schedule on which the workflow runs.

Before you define the schedule for the workflow, you must create the saved search. The saved search must run on the same record type as the base record type for the workflow. The saved search must also include at least one filter set on the **Criteria** subtab for the saved search. On the workflow definition page, select the **Scheduled** option, select the saved search, and set the schedule for the workflow.

Important: When you create a saved search, be sure to add enough filters on the Criteria subtab to limit the results to just the records you want. If you don't, the saved search might return too many results and the scheduled workflow might not execute as expected. For example, it could take longer to run than you planned, which could affect the performance of other workflows.

At the scheduled time, NetSuite runs the saved search and initiates a workflow instance to run on each of the records in the search results. For example, if the saved search returns 10 records, NetSuite initiates 10 instances of the workflow. Scheduled workflows always run on all of the records in the search results, not only the records you can see on the main page (for summary type result) of the saved search.

To set up a scheduled workflow, select the saved search it should run on and select the schedule options. You can schedule the saved search and workflow to run one time, or use the **Repeat** option for a repeating schedule. If you want the workflow to run one time, select the saved search, clear the **Repeat** box, and set the **Execution Date** and **Execution Time**. If you want the workflow to run more than one time, select the saved search, check the **Repeat** box, and set the related options.

Consider the following when you create scheduled workflows:

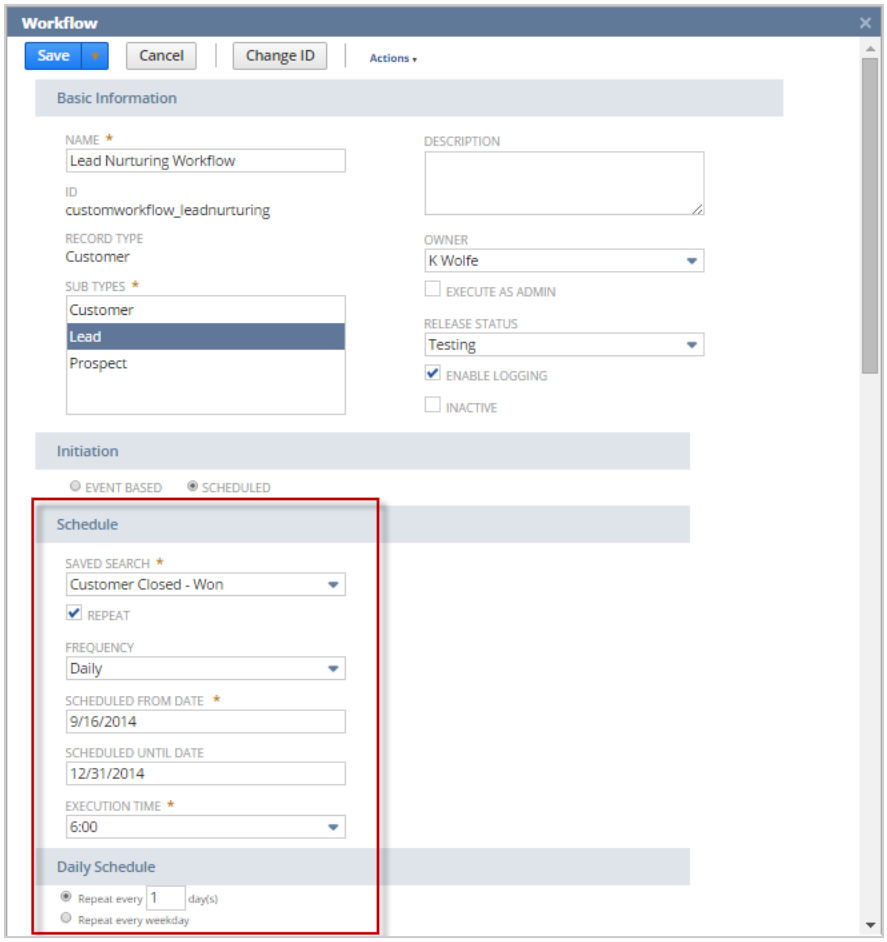
- NetSuite runs multiple workflows in parallel. Each workflow instance runs as an administrator, and any system note shows "System" as the user name.
- There is no set order for when scheduled workflows start and finish. For example, three scheduled workflows, A, B, and C, are all scheduled at the same time. NetSuite simultaneously runs each saved search and initiates workflows on the results. Depending on the workflow and the number of search results, any of the workflows may complete before the other two.
- Only scheduled workflows with a **Released** status run on a schedule.

- Schedule workflows to run on saved searches that return narrow search results by setting filters on the Criteria subtab. If you don't add enough filters, the saved search could return too many results, and the workflow may not execute as expected.
- You must set all workflow initiation criteria when you create the saved search. You can't set a condition to initiate a scheduled workflow.
- If you schedule workflows to run on saved searches from SuiteApps, you need the SuiteApp Marketplace permission assigned or the scheduled workflow won't run correctly.

For a detailed instruction about how to create a scheduled workflow, see Scheduling a Workflow.

For more information about how NetSuite runs scheduled workflows, see Scheduled Trigger.

The following screenshot shows a lead nurturing workflow scheduled to run against Customer Lead records on a daily basis:



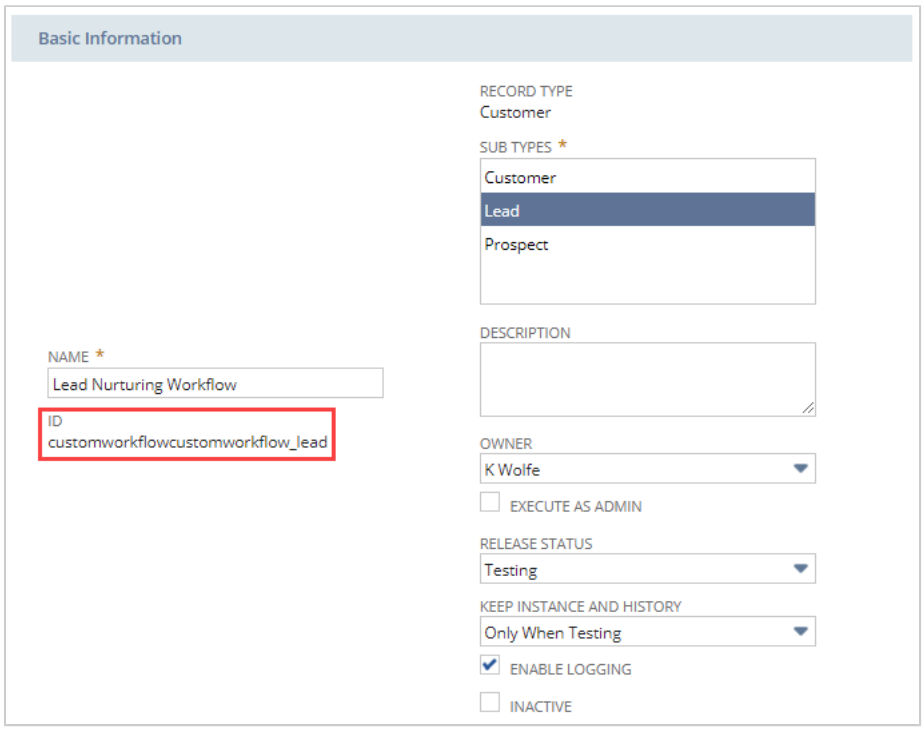
For an example of how to create a saved search and use it in a scheduled workflow, see Welcome Email Sent to Customers Three Days After First Order Workflow.

Using SuiteScript to Initiate a Workflow

You can use a SuiteScript 2.x workflow action script to programmatically initiate a workflow on demand. Use the numeric workflow internal ID or custom script ID, the script ID of the base or subrecord types, and the internal ID of the record to identify the workflow and the record on which the workflow initiates.

The workflow custom script ID is specified in the ID field of the workflow definition page. For more information about workflow action scripts, see the help topic Creating and Using Workflow Action Scripts.

The following screenshot shows the script ID location:



Dynamic Mode for Workflows

Workflows almost always run in dynamic mode. That means any dynamic effects—like validation, sourcing, and calculation—show up in real time when the workflow executes. This visibility lets subsequent actions and transitions to react to these dynamic effects.

See the following sections:

- Dynamic Versus Standard Mode in Workflows
- Order of Setting Fields in Standard and Dynamic Modes
- Dynamic Mode Limitations in Workflows
- Record Modes and User Event Scripts
- Record Module Method Considerations

Dynamic Versus Standard Mode in Workflows

The following example shows the difference between dynamic and standard mode in a workflow.

A workflow on a Task record* has two Set Field Value actions in the following order:

1. Set the **Status** field to **Completed**.
2. Set the **Message** field to **Completed after due date!** when the **Date Completed** field is set to a date after the specified due date.

*The Task record has a built-in logic which automatically sets the **Date Completed** field to today when the **Status** field is changed to **Completed**.

In dynamic mode, the **Date Completed** field is automatically set to today's date when the Status field is set to **Completed**. If today's date is later than the task's specified due date, the **Message** field is set to **Completed after due date!** This is possible in dynamic mode because the second action can immediately see the first action's effects.

In the same case in standard mode, the **Message** field remains empty, because the second action cannot see the first action's effects. The record must first be saved for the effects of the first action to be seen on the record.

Order of Setting Fields in Standard and Dynamic Modes

In standard mode, regardless of the order of Set Field Value actions, values are effectively set and the dynamic effects are executed in a pre-defined order when the record is saved after the workflow runs.

In dynamic mode, the order of the Set Field Value actions needs to match the order that a user interacts with the record on the UI. This is because the actions' related dynamic effects are immediately executed in this order within the workflow's execution.

The following example shows problems with ordering Set Field Value actions.

A workflow has two Set Field Value actions in the following order:

1. **Contact** field = **John Black from Big Company**
2. **Company** field = **Big Company**

In standard mode, the workflow actions run without error. First, the **Company** field is set to **Big Company**, then the **Contact** field is set to **John Black from Big Company**.

In dynamic mode, the workflow would fail, resulting in an error similar to **Invalid contact reference key for company 165**. This is because the contact is set, but the company has not yet been set. Therefore, John Black from Big Company is not considered to be a valid value for the **Contact** field and an error results.

Dynamic Mode Limitations in Workflows

In some cases, SuiteFlow cannot use dynamic mode. These cases include actions and transitions on Before Record Load.

Workflow Audience

There are two types of workflow users:

- Users who can create and view workflows
- Users who can run workflows

Users Who Can Create and View Workflows

NetSuite administrators and users with the Workflow permission assigned to their role can create and view workflows. Administrators can modify any workflow in the system, even if they are not the owners of

a workflow. Users who are not an administrator, but who have the Workflow permission, can create and edit any workflows on records for which they have the full permission level assigned. To access, create, or modify a workflow, it is also necessary for users to have the feature related to the workflow base record enabled in their account.

Administrators can assign the Workflow permission to a role by going to Setup > Users/Roles > Manage Roles. See the help topic Customizing or Creating NetSuite Roles.

Administrators and users with the Workflow permission on their role can also perform the following tasks:

- View existing workflows. View existing workflows at Customization > Workflow > Workflows. See Viewing Existing Workflows.
- Perform workflow administration. Execute a saved search for workflows or workflow instances, cancel workflows, perform mass updates, and bundle workflows. See Workflow Administration.
- Specify the workflow audience. For more information, see Defining the Workflow Audience.

Users Who Can Run Workflows

Workflow instances run on records transparently to the user. Users create or update a record and do not know that by creating, viewing, or updating a record they are putting the record into a workflow.

Workflows run for any user depending on the following conditions:

- **User has access to the base record**. If your workflow requires that users have view, edit, and create permission levels for the base record, you should check that the roles of all intended users have the appropriate permission and access levels. Workflows do not run for users who do not have the required permission levels. See Workflow Base Record.

  For example, most users do not have view or create access to Employee records. If you create a workflow to run on Employee records, this workflow does not run for users who do not have access to the Employee record type.
- **User has access to any joined records**. If your workflow sets a field on a record, based on the value of a field in a related record, users must also have at least the View permission level for the related record type. Otherwise, the workflow does not work as intended.

  For example, a workflow that uses a Set Field Value action to set a value on a Purchase Order from a related Vendor or Employee record, then all users accessing the Purchase Order also need at least the View permission level for Vendor and Employee record types.

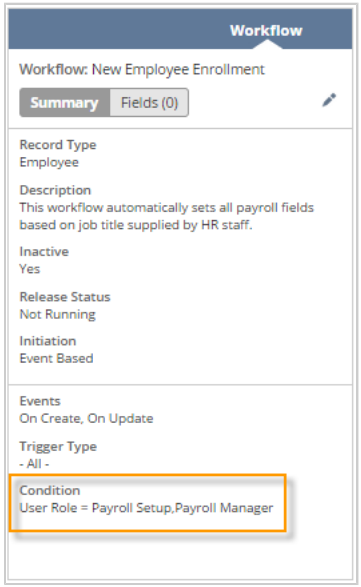
  For more information about a possible workaround for issues with joined records, see Execute as Admin for Workflow Instances.
- **Workflow is released.** The release status of workflows can be set to Suspended, Not Initiating, Testing, or Released. For more information about the release status, see Release Status for Workflow Instances.

Defining the Workflow Audience

The audience for any workflow is determined by those users who have view, edit, or create level access to the base record type for the workflow. However, you can use conditions on workflow initiation, actions, and transitions to further refine the scope of a workflow.

Use a condition on the workflow, action, and transition definition pages to define conditions that determine the audience of the workflow. You can use the fields available on the base record type as well as any fields available to related records to define the users for whom a workflow initiates or executes actions.

For example, you can use the User Role field to limit workflow initiation for users logged in with the Payroll Setup or Payroll Manager roles:



Creating Your First Workflow

This tutorial describes the necessary steps to create and run a workflow in NetSuite. Use these steps to get familiar with the Workflow Manager user interface and the parts of a workflow.

In this tutorial, you will create a workflow that runs when a user creates a new Opportunity record. The workflow makes the **Title** field on the opportunity record required and sends the user to the Opportunities list page after they save the opportunity.

To view, create, or edit workflows, you need the right permissions for the base record types in the workflow. To access all of SuiteFlow functionality, use the Administrator role. For more information, see Required Permissions for SuiteFlow.

The following table describes the tutorial steps. Each step builds on the previous step, so you must complete them in order.

Step	Description
Define basic workflow properties	Create the workflow and define the basic properties on the workflow definition page, including the workflow name, workflow base record, owner, and release status. See Step 1 Define Workflow Basic Information.
Define workflow initiation	Define the workflow initiation on the workflow definition page. The workflow initiates on creation of an Opportunity record. See Step 2 Define Workflow Initiation.
Define the workflow condition	Define a condition that must be met for the workflow to initiate. See Step 3 Define the Workflow Condition.
Create workflow states	Create the two states required by the workflow: the entry state and the exit state. See Step 4 Create Workflow States.
Create actions	Create the actions to make a field required and to go to the Opportunities list page. See Step 5 Create Actions.
Create a transition	Create a transition between the entry and exit states. See Step 6 Create a Transition
Initiate and validate the workflow	Create an opportunity and verify that the workflow executes as expected. See Step 7 Initiate and Validate the Workflow.

Tip: See the **Related Topics** sections in each step to get more information about the concepts or properties.

Step 1 Define Workflow Basic Information

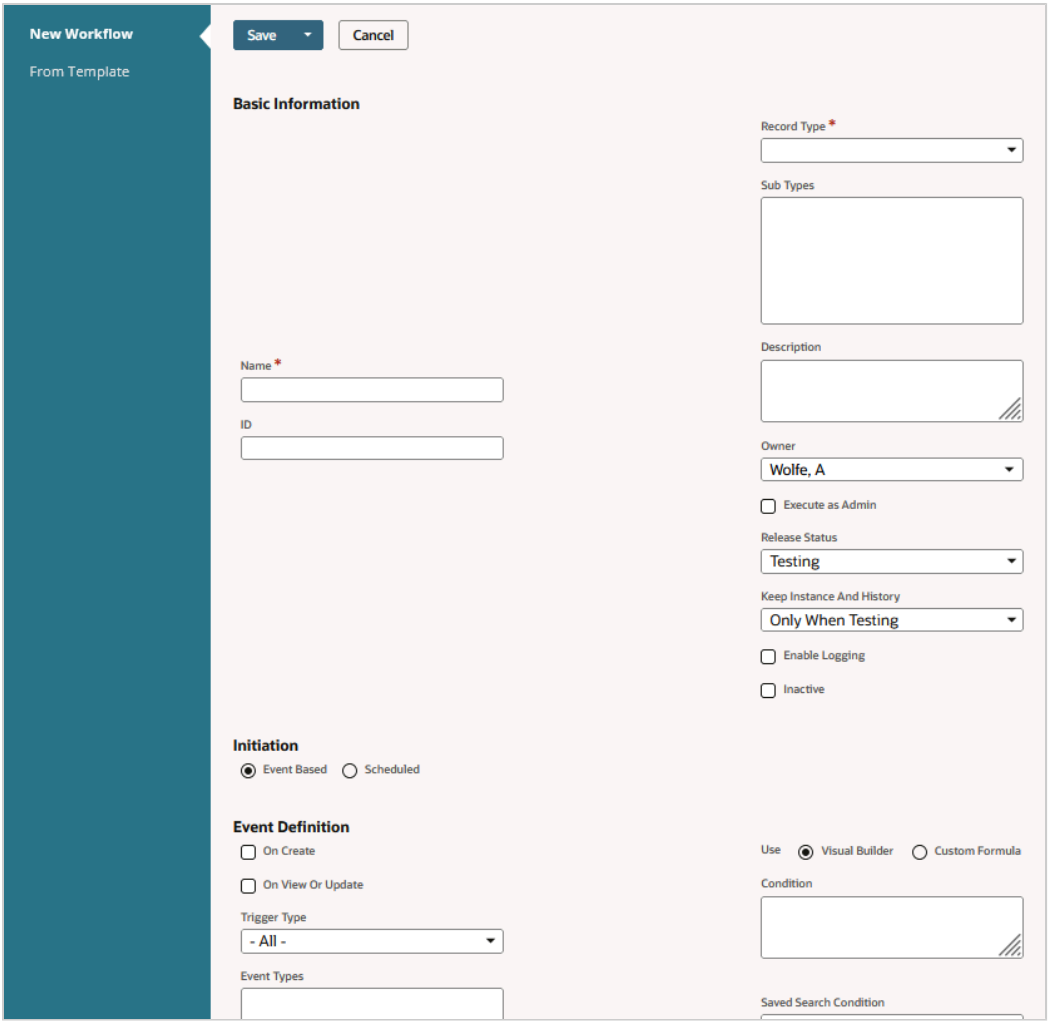
This step shows you how to use the Workflow Manager to create a workflow and define the workflow properties, including workflow name, workflow base record, owner, and release status, on the workflow definition page.

To create a workflow and define the basic properties:

1. To create a new workflow, go to Customization > Workflow > Workflows > New. The workflow definition page opens with the following default settings:
   - **Owner**: Make sure your name appears here
   - **Release Status**: **Testing**

- **Keep Instance and History**: **Only When Testing**
- **Event Based**: Selected
- **Visual Builder**: Selected
- **Trigger Type**: **All**
- **Contexts:** All selected

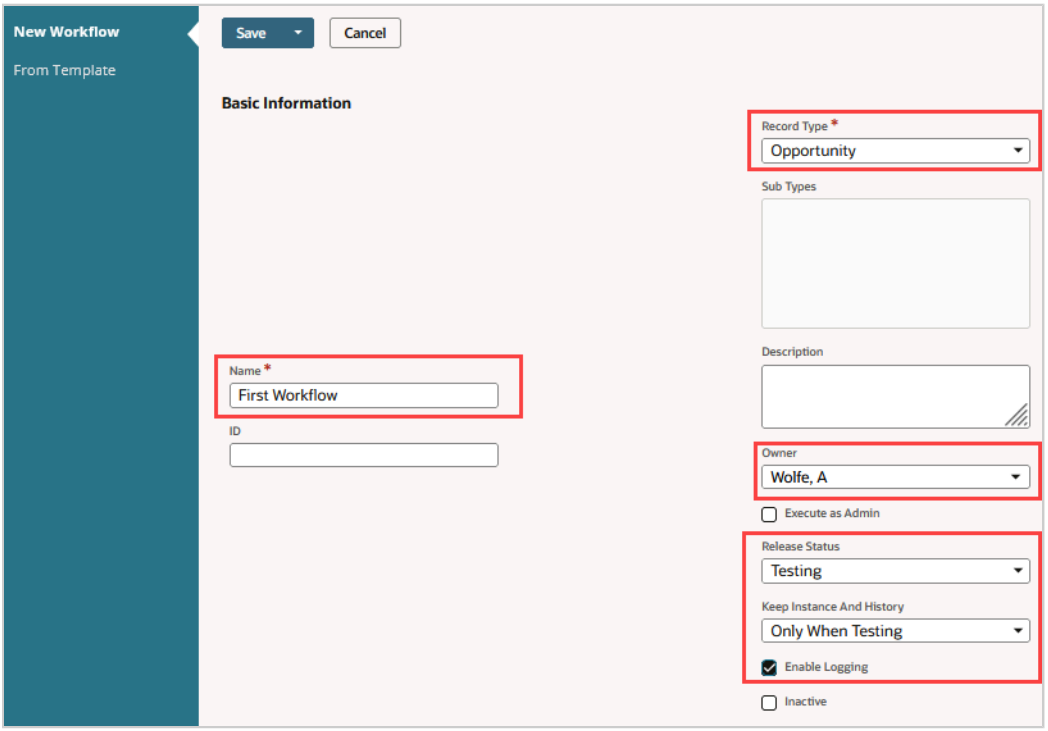
The following screenshot shows the workflow definition page and the default settings:



2. Under **Basic Information**, enter the following properties:

Property	Value
Name	First Workflow
Record Type	Opportunity
Owner	Verify that your name appears
Release Status	Testing
Keep Instance and History	Only When Testing
Enable Logging	Checked

Make sure that the workflow properties match the following screenshot:



3. To continue with the tutorial, continue to Step 2 Define Workflow Initiation.

> **Note:** Record sub types are not available for an Opportunity record and the **Sub Types** field is only available for Item, Transaction, and Customer record types. For more information about record sub types, see Workflow Base Record.

Step 2 Define Workflow Initiation

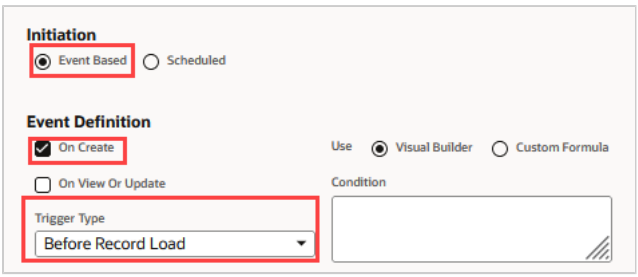
This step shows you how to use the Workflow Manager to set the workflow to start when a record is created.

To define the workflow initiation:

1. If you haven't already, complete Step 1 Define Workflow Basic Information.
2. On the workflow definition page, select the following properties:

Property	Value
Event Based	Selected
On Create	Checked
Trigger Type	Before Record Load

Make sure that the workflow properties match the following screenshot:



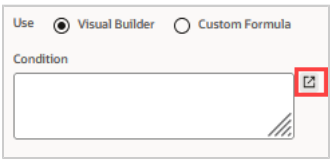
3. To continue with the tutorial, continue to Step 3 Define the Workflow Condition.

Step 3 Define the Workflow Condition

This step shows you how to use the Condition Builder in the Workflow Manager to define a condition for a workflow initiation. An instance of the workflow only initiates for records that meet the condition.

To define a condition for workflow initiation:

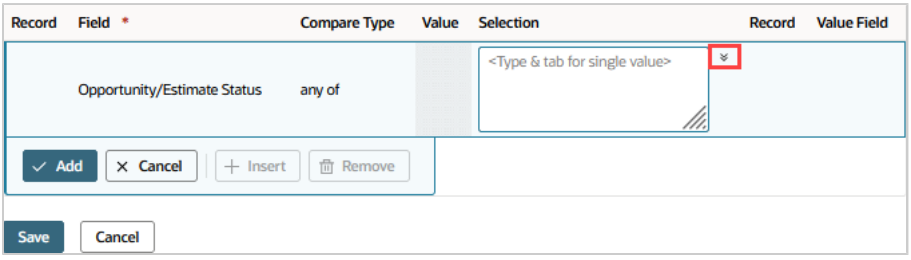
1. If you haven't already, complete Step 2 Define Workflow Initiation.
2. On the workflow definition page, make sure Visual Builder is selected and click the open icon to open the Condition Builder. The following screenshot shows the location of the open icon:



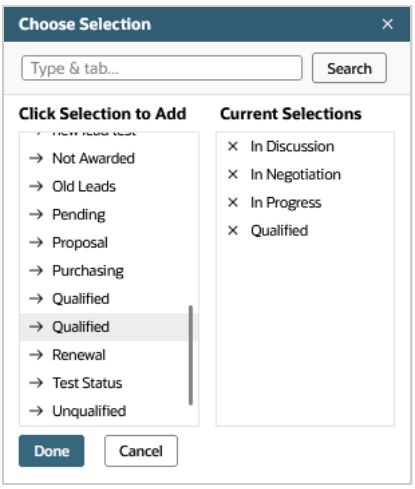
3. In the **Workflow Condition** window, enter the following details:

Property	Value
Field	Opportunity/Estimate Status
Compare Type	any of

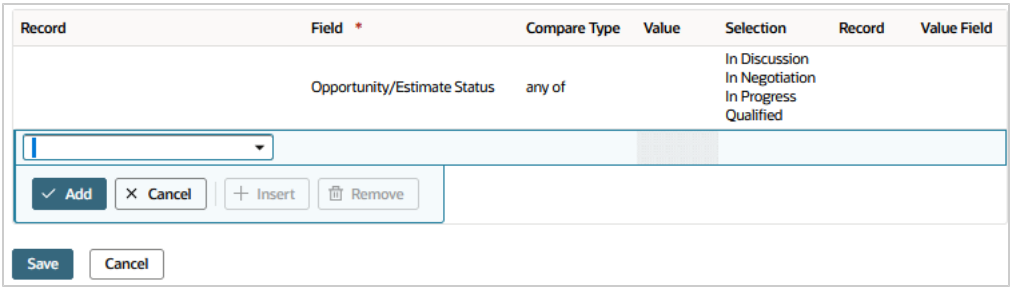
4. In the **Selection** column, click the Selection box, then click the **Select Multiple** button.



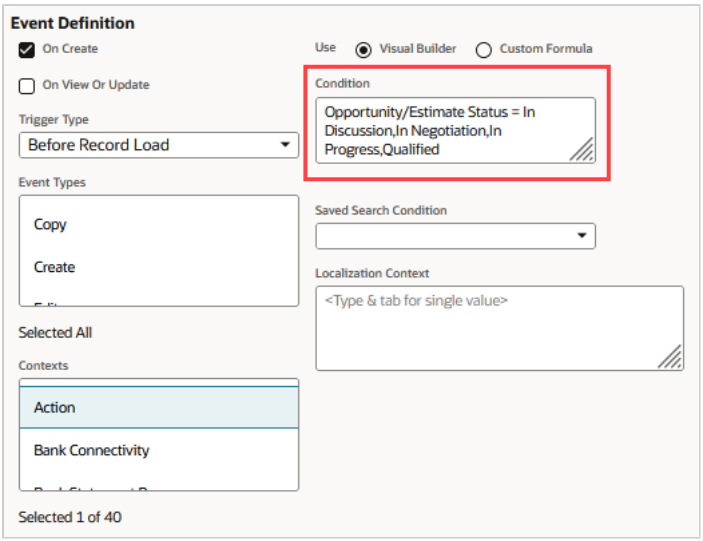
5. In the **Choose Selection** window, in the **Click Selection to Add** column, select **In Discussion**, **In Negotiation**, **In Progress**, and **Qualified**.



6. Click **Done**.
7. In the **Workflow Condition** window, click **Add**.



8. Click **Save**. Make sure that the workflow properties look like the following screenshot:



9. Click **Save** to save the workflow. The workflow diagrammer and context panel appears.
10. To continue with the tutorial, continue to Step 4 Create Workflow States.

Step 4 Create Workflow States

This step shows you how to use the workflow diagrammer to create and edit states in a workflow. You must create states before you can create actions or transitions.

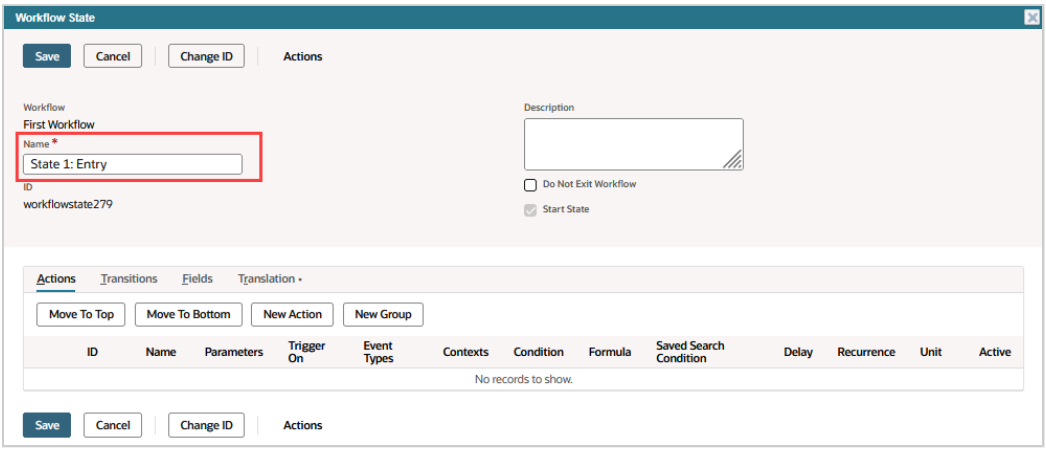
When you create a workflow, the Workflow Manager includes a single state by default. In this step, you will modify the default state and create an additional state. The workflow enters these two states when it runs on an opportunity.

To create the required states for the workflow:

1. If you haven't already, complete Step 3 Define the Workflow Condition.
2. Create a second state by clicking the **New State** button in the diagrammer.

   The second state, State 2, appears in the diagrammer. The workflow diagrammer already contains the default state, State 1. The **Start** and **End** icons indicate that State 1 is both an entry (Start) and an exit (End) state.

3. To change the name of State 1, double-click it in the diagrammer. In the **Name** box of the **Workflow State** window that appears, change the name to **State 1 Entry** and click **Save**.



4. Repeat the previous step to change **State 2** to **State 2 See Opportunities**.

   > **Note:** You can also select a state in the diagrammer and click the **Edit** icon in the context panel.

5. To continue with the tutorial, continue to Step 5 Create Actions

Step 5 Create Actions

This step shows you how to use the **Workflow State** window to add actions to a state. The actions you add to each state run based on their triggers when the record enters that state in the workflow.

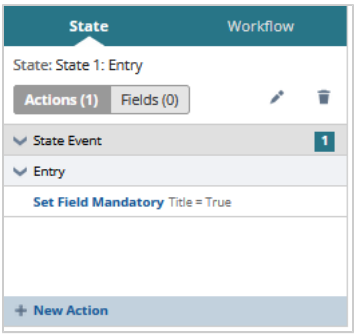
In this step, you will add a Set Field Mandatory action in **State 1 Entry** and a Go To Page action in **Step 2 See Opportunities**.

To create the actions in the workflow states:

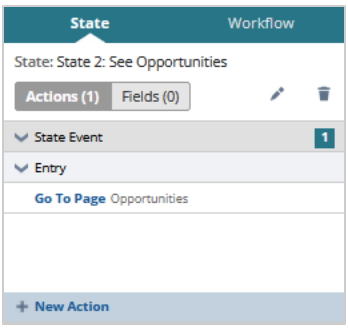
1. If you haven't already, complete Step 4 Create Workflow States.
2. To create a new action for **State 1 Entry**, in the workflow diagrammer, double-click **State 1 Entry** and click the New Action button in the **Workflow State** window.
3. Click **Set Field Mandatory**.
4. In the **Workflow Action** window, set the following properties:

Property	Value
Trigger On	Entry
Field, in the **Parameters** section	Title
Mandatory, in the **Parameters** section	Checked

5. Click **Save**.
6. Make sure that the action in the context panel matches the following screenshot:



7. Repeat step 2 to access the **New Action** window for **State 2 See Opportunities**.
8. Click **Go To Page**.
9. Set the **Trigger On** field to **Entry**.
10. Under **Parameters**, in the **Target Page** field, enter **Opportunities** and select **Opportunities** in the dropdown list that appears.
11. Click **Save**.
12. Make sure that the action in the context panel matches the following screenshot:



13. To continue with the tutorial, continue to Step 6 Create a Transition.

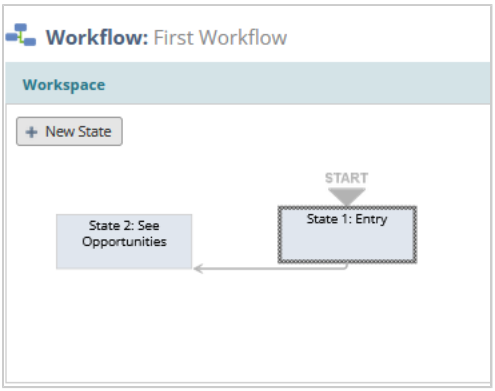
Step 6 Create a Transition

This step shows you how to create and edit a transition. You can use the diagrammer to drag and drop a transition between states and then edit the transition properties. Any changes made in the diagrammer are immediately saved.

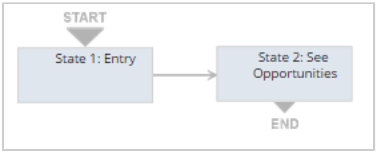
In this step, you will create a transition between **State 1 Entry** and **State 2 See Opportunities** that executes after an opportunity record is saved for the first time.

To create and edit a transition:

1. If you haven't already, complete Step 5 Create Actions.
2. In the diagrammer, hover over the **End** icon on **State 1 Entry**. The cursor becomes a filled half-circle.
3. Drag and hover over **State 2 See Opportunities**. The following screenshot shows how the cursor becomes an arrow and you can drag it to the required state:

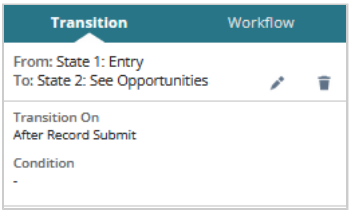


The diagrammer creates a transition when you release the mouse and **State 2 Opportunities** becomes the new exit (End) state. You can also click and drag the states to new locations. The following screenshot shows a transition between state 1 and state 2:



> **Note:** You can also create and edit a transition by editing the state properties for the state that you want to transition from and clicking the **New Transition** button.

4. Select the transition in the diagrammer and click the **Edit** icon in the context panel.
5. In the **Workflow Transition** window, select **After Record Submit** for the **Transition On** property.
6. Click **Save**.
7. Make sure that the transition in the context panel matches the following screenshot:



8. To continue with the tutorial, proceed to Step 7 Initiate and Validate the Workflow.

Step 7 Initiate and Validate the Workflow

This step shows you how to initiate the workflow by creating an Opportunity record. After a user creates and saves an opportunity with a status of **In Discussion**, **In Negotiation**, **In Progress**, and **Qualified**, NetSuite initiates an instance of the workflow on the record.

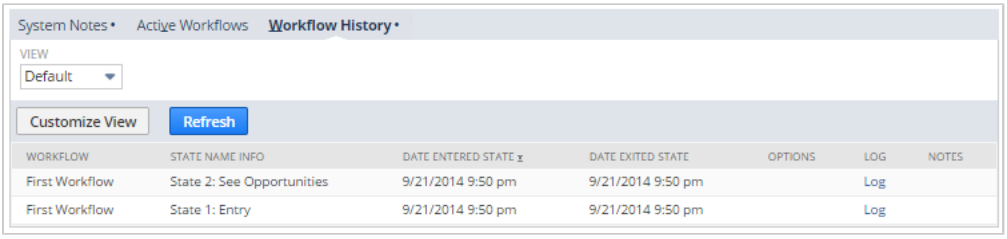
Use the behavior of NetSuite and the workflow activity information to validate the tasks performed by the workflow.

To initiate and validate the First Workflow workflow:

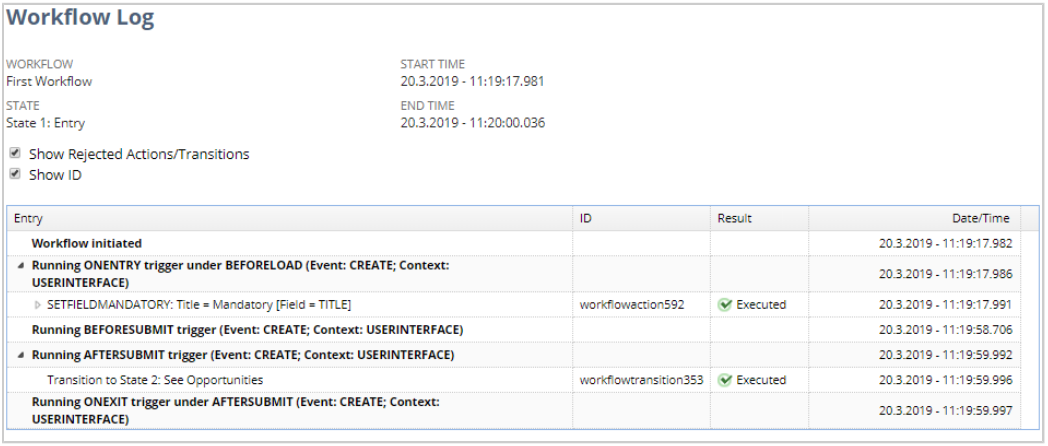
1. If you haven't already, complete Step 6 Create a Transition.
2. Go to Transactions > Sales > Create Opportunities. A new Opportunity record form opens:
   - The default value of the **Opportunity Status** field on an opportunity is **Qualified**, so the initiation condition for the workflow was met.
   - The **Title** field appears with an asterisk, indicating it is a required field. This indicates that the record entered **State 1 Entry** in the workflow and the Set Field Mandatory action executed.
3. On the Opportunity record form, select a company, enter a value in the **Title** field, and click **Save**.

   The Opportunities list page appears, indicating the After Record Submit trigger executed, the record transitioned to **State 2 See Opportunities**, and the Go To Record action executed.
4. On the Opportunities list page, open the recently created opportunity, click the **System Information** subtab, and then click the **Workflow History** subtab.

   The **Workflow History** subtab shows the two states for the workflow, the date and time each state was entered and exited by the workflow, and the workflow execution log for each state:



5. Click **Log** for **State 1 Entry**. The workflow execution log shows the triggers, actions, and transitions executed:



Workflow Log

WORKFLOW
First Workflow

START TIME
20.3.2019 - 11:19:17.981

STATE
State 1: Entry

END TIME
20.3.2019 - 11:20:00.036

☑ Show Rejected Actions/Transitions
☑ Show ID

Entry	ID	Result	Date/Time
Workflow initiated			20.3.2019 - 11:19:17.982
Running ONENTRY trigger under BEFORELOAD (Event: CREATE; Context: USERINTERFACE)			20.3.2019 - 11:19:17.986
SETFIELDMANDATORY: Title = Mandatory [Field = TITLE]	workflowaction592	Executed	20.3.2019 - 11:19:17.991
Running BEFORESUBMIT trigger (Event: CREATE; Context: USERINTERFACE)			20.3.2019 - 11:19:58.706
Running AFTERSUBMIT trigger (Event: CREATE; Context: USERINTERFACE)			20.3.2019 - 11:19:59.992
Transition to State 2: See Opportunities	workflowtransition353	Executed	20.3.2019 - 11:19:59.996
Running ONEXIT trigger under AFTERSUBMIT (Event: CREATE; Context: USERINTERFACE)			20.3.2019 - 11:19:59.997

Note: If the workflow does not run as expected, you can use the workflow execution log to troubleshoot issues.

Working with Workflows

To create a workflow, first you define it on the workflow definition page. Then, you use the diagrammer and context panel to create and edit states, actions, transitions, conditions, and custom fields. For more information about each of the basic elements of a workflow, see Workflow Elements.

To view, create, and edit workflows, you must have the correct permission and permission level for working with the base record types in the workflow. If you want access to all SuiteFlow functionality, you need the Administrator role. For more information, see Required Permissions for SuiteFlow.

The following table describes the basic steps for creating a workflow:

Task	Description
Creating and editing a workflow	Create the workflow on the workflow definition page. Specify the workflow basic properties, event definition, and workflow initiation properties. You can also schedule a workflow, view and edit existing workflows, and copy and inactivate workflows. Optionally, you can create a workflow based on a template. For information, see: ▪ Creating a Workflow ▪ Creating a Workflow from a Workflow Template ▪ Scheduling a Workflow ▪ Viewing Existing Workflows ▪ Editing a Workflow
Create and editing states	Use the workflow diagrammer to create states, and then use the diagrammer, context panel, or **Workflow State** window to edit or delete them. See Working with States.
Create and edit actions	Use the context panel or **Workflow State** window to create, edit, or delete actions. You can also reorder, move, or copy actions, use action groups to use a share condition, or schedule an action. See Working with Actions.
Create and edit transitions	Use the workflow diagrammer or **Workflow State** window to create, edit, delete or schedule transitions. See Working with Transitions.
Create conditions	You can create conditions for starting a workflow or for running actions or transitions. Build conditions with the Condition Builder, or create formulas with the Formula Builder. See Working with Conditions.
Create custom fields	You can create or edit workflow and state fields in the context panel or **Workflow State** window. See Working with Custom Fields.

Creating a Workflow

When you create a workflow, you specify its basic workflow properties, event initiation, and initiation settings. Use the following steps to create a workflow based on an event. If you want to create a workflow that runs on a schedule, see Scheduling a Workflow.

Important: This procedure assumes you're already familiar with workflow elements. For more information about each of the workflow elements, see Workflow Elements.

To create a workflow:

1. In NetSuite, go to Customization > Workflow > Workflows > New.
2. Under **Basic Properties**, set the following basic properties:

Property	Description
Name	Name of the workflow (up to 40 characters). Workflows on the Workflow list page appear with this name. This name is also used on the record for workflow instances, shown on the **Active Workflows** and **Workflow History** subtabs.
ID	Optional script ID for the workflow definition. This value must be lowercase, can't have spaces, and can't be longer than 26 characters. Use Script IDs if you plan to bundle the workflow and deploy it to another NetSuite account. Script IDs help avoid naming conflicts when workflows are deployed to other accounts. NetSuite prefixes this value with `customworkflow` when you save the workflow. You can change the script ID after you create the workflow. See Editing a Workflow Script ID.
Record Type	Record type where you want instances of the workflow to run. This record type can be a standard or custom NetSuite record type. You can specify only one base record type per workflow definition. If you choose Customer, Transaction, or Item, you can also select a sub type. See Workflow Base Record.
Sub Type	Sub type or secondary record type for customer, transaction, or item record types. Hold down the Ctrl key to select more than one.
Description	Optional text description.
Owner	User account that owns the workflow and receives email messages if errors happen during scheduled workflow actions. If the **Release Status** is set to **Testing**, only the workflow owner can initiate the workflow. See Release Status for Workflow Instances.
Execute As Admin	Means the workflow runs as a user with the Administrator role and ignores the role of the user. This property might give users more access than you intend. For more information about this property and usage guidelines, see Execute as Admin for Workflow Instances.
Release Status	Release status of the workflow. Choose one of the following options: ▪ **Testing**. The workflow initiates only for its owner. This is the default release status for new workflows. ▪ **Released**. The workflow initiates for any user, based on the workflow initiation properties. ▪ **Not Initiating**. The workflow doesn't initiate, but you'll see it on the Workflow list page. Any existing workflow instances continue running. ▪ **Suspended**. No new workflow instances are created and no existing instances run. If the workflow has scheduled workflows, transitions, or actions, none of them will run. See Release Status for Workflow Instances.

Property	Description
Keep Instance and History	Indicates whether the workflow history is saved in the database as the workflows run and after they finish. Execution and error log records show workflow history. You can select one of the following options: ▪ **Only When Testing**. If you select this option, workflow history is kept only when the Release Status is **Testing**. ▪ **Never**. If you select this option, workflow history is never kept. ▪ **Always**. If you select this option, workflow history is always kept. By default, **Only When Testing** is selected when you create new workflows. If you select **Never**, workflow instance and history records are available on the record's **Active Workflows** and **Workflow History** subtabs while the workflow is running. When the workflow is finished or is canceled, the related history records are deleted. However, if the workflow transitions to a state with the **Do Not Exit Workflow** box checked, history records are never deleted.
Enable Logging	Means that NetSuite generates a workflow execution log for each state entered during workflow execution. In testing mode, this box is checked by default, but in released mode, you must check the box yourself. For more information about the workflow execution log, see Workflow Execution Log.
Inactive	Means that no new workflow instances start, and the workflow doesn't appear by default on the Workflow list page.

3. Under **Initiation**, select **Event Based**.

> **Note:** To create a scheduled workflow, see Scheduling a Workflow.

4. Under **Event Definition**, set the following properties to define the workflow initiation:

Property	Description
On Create | On Update	Means that NetSuite initiates a new workflow instance when a record of the base record type is created or updated: ▪ **Created.** NetSuite creates a record of the base type. ▪ **Updated.** NetSuite opens a record of the base type to view or edit. This event can occur in the NetSuite UI or from the types of NetSuite functionality listed in the **Context Type** box. For more information, see Workflow Initiation and Execution Contexts and Workflows.
Trigger Type	The server trigger where you want a workflow instance to initiate. The workflow instance initiates and the record enters the entry state on this trigger type. For more information, see Workflow Triggers and Workflow Initiation Triggers.
Event Types	The activity that created, viewed, or updated the record. The workflow instance initiates only if the event occurs. For example, you can set the workflow to initiate only if a record was copied. For more information, see Workflow Event Types and Event Types Reference.
Contexts	The NetSuite feature used to create, view, or update the record. The workflow instance initiates only if this context occurs. For example, you can set the workflow instance to initiate only when the record for the workflow is created by a web service. For more information, see the help topics Execution Contexts and Execution Context Types.

Property	Description
Condition	Condition to limit when a workflow instance initiates. A workflow instance for the record type initiates only if this condition is met. Use the Condition Builder or the Formula Builder to create a condition or formula. For more information, see Defining a Condition with the Condition Builder or Defining a Condition with Formulas.
Saved Search	Saved search that returns records matching the base record type for the workflow. NetSuite runs the saved search and initiates a workflow instance if the record meets the saved search criteria. The saved search must have at least one filter set on the **Criteria** subtab. **Note:** An error can occur if the Saved Search filter isn't public or shared with the user or role. Ensure that saved searches are available to anyone who needs to run the workflow.

5. (Optionall) If custom fields of type **Workflow** exist, set the field values under **Custom**.

   The **Custom** section doesn't appear if there are no custom fields of type **Workflow** in the account.

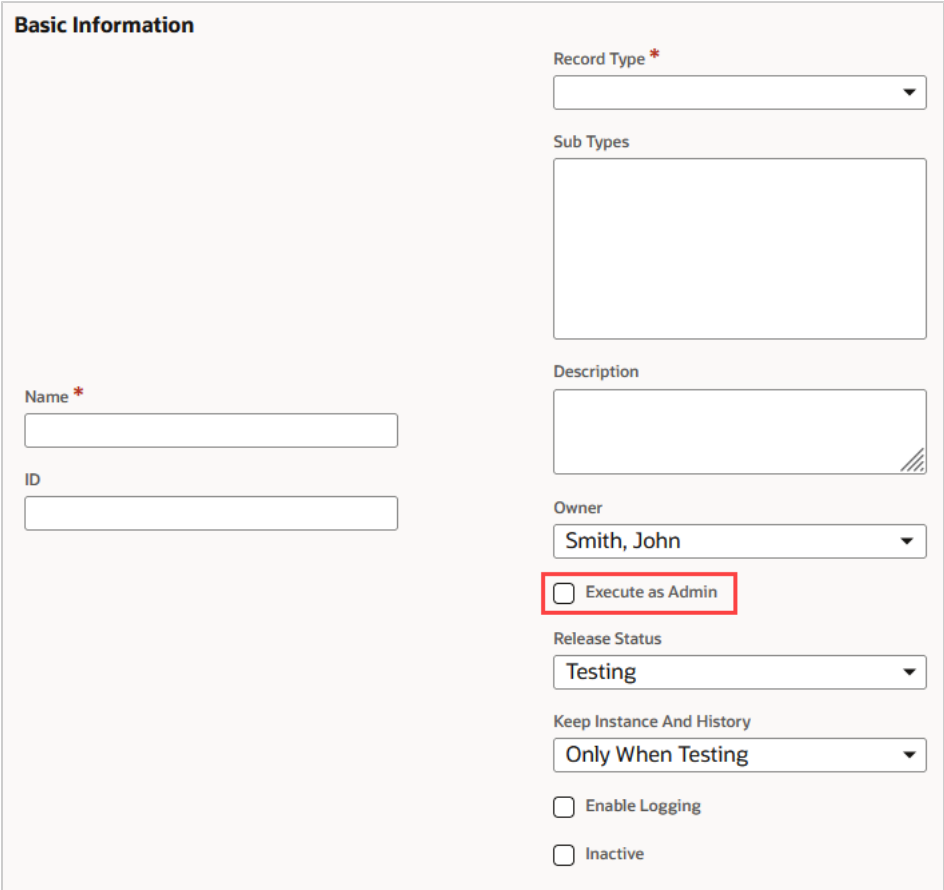
6. Click **Save**. NetSuite creates the workflow with an initial state and opens it in the Workflow Manager.

   You can continue to define the workflow by adding states. See Working with States.

Note: If you don't want the workflow to run, set it to inactive or set the release status to **Not Initiating** or **Suspended** before you save it. See Inactivating a Workflow and Release Status for Workflow Instances.

Execute as Admin for Workflow Instances

On the workflow definition page, you can check the **Execute As Admin** box to have NetSuite to execute workflow instances as a user with the Administrator role. These privileges override the role of the user who initiated the workflow instance.



Some workflows may require administrator privileges. For example, you create a workflow that adds follow-up tasks after a sales order is saved and it needs to read data from employee records. The workflow instance won't work if the user doesn't have access to those records.

Rules and Guidelines for Using Execute As Admin

Important: Use **Execute As Admin** only when required. Otherwise, you may give users more data access than intended.

Use the following rules and guidelines with this property:

- If you check **Execute As Admin**, any action with a record join must execute on a server trigger, not a client trigger. Actions on a client trigger won't run as expected. For more information about the difference between server and client triggers, see Workflow Triggers.
- Only users with the Administrator role can check **Execute As Admin**. This box is disabled for all other roles, even those with the full Workflow permission. The same applies for the **Execute As Admin** box on the SuiteScript Deployment page.
- If you check **Execute As Admin**, the Override Period Restrictions permission isn't enabled for the workflow. Instead, the logged in user's permission is used to determine if the workflow can update Posting Period fields. This prevents users without the Override Period Restrictions permission from posting transactions in locked periods. However, other updates such as changes to **Approval Status** may still change Posting Period values, even if the user doesn't have the Override Period Restrictions permission.
- The Execute As Admin feature doesn't affect the Allow Non G/L Changes permission for editing period end journals. When you check the Allow Non G/L Changes box, users with the Allow Non G/L changes

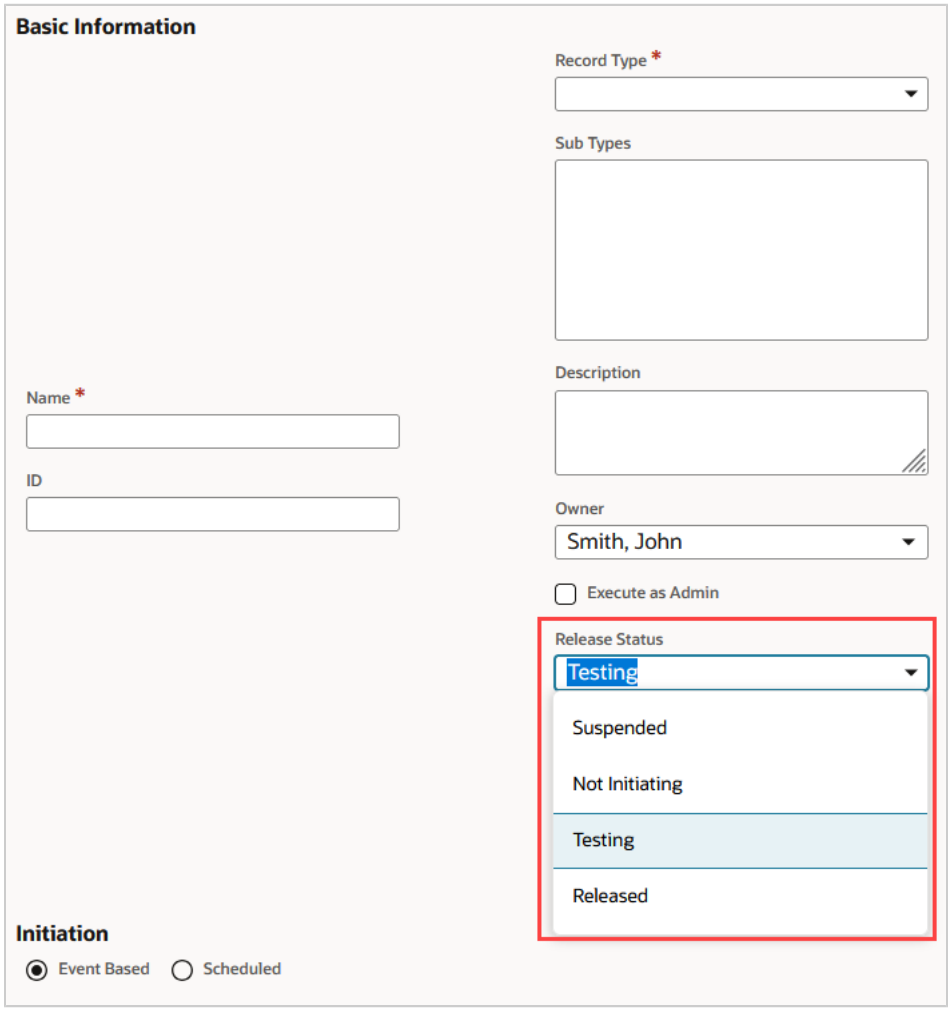
permission can edit journals that don't affect the general ledger. If you check **Execute As Admin**, that doesn't change the editing permissions for period end journals.

- If you create a workflow that is initiated by users in the Employee Center, you'll usually need to enable **Execute As Admin**.

> **Note:** If your workflow has an Add Button action, when someone clicks the button and saves the record, the System Notes show the role of the user as Administrator, no matter what role they use. This is expected and is not related to the Execute As Admin box.

Release Status for Workflow Instances

Use the Release Status property to test a workflow, make it available to everyone, or keep it from running.



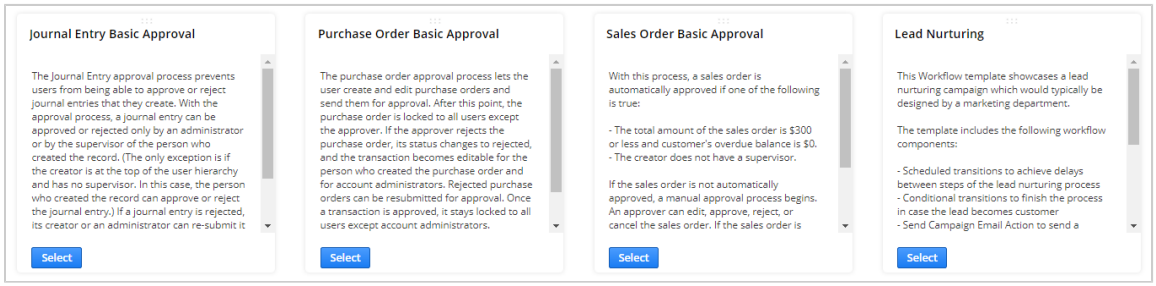
The following table describes the workflow release statuses and when you should use each status:

Release Status	Description	When to Use
Suspended	No new workflow instances are created and no existing instances run. If there are scheduled workflows, transitions, or actions, none of these run.	Use this when you want a workflow to stop running, but you don't want to delete it.

Release Status	Description	When to Use
	You can't initiate a suspended workflow using SuiteScript, or using the Initiate Workflow or Mass Update actions in SuiteFlow. To resume a suspended workflow, change its Release Status something other than Suspended.	
Not Initiating (Not initiating mode)	New instances of the workflow don't start, but instances already running continue to run. The workflow still appears on the Workflow list page. It's similar to inactivating a workflow.	Use this when you don't want any new workflow instances to start but you still want existing instances to run. See Viewing Existing Workflows.
Testing (Testing mode)	A workflow instance initiates only for the workflow owner. However, anyone who accesses the record can see the changes that the workflow made to the record. Workflow actions execute for the user even if they didn't initiate the workflow instance. Scheduled workflows don't run when the workflow is in testing mode. This is the default Release Status when you create a new workflow.	Use when you want to test a workflow. In testing mode, the workflow execution log appears for each state on the **Workflow History** subtab on any record in a workflow. See Workflow Execution Log.
Released (Released mode)	An instance of the workflow initiates for any user with access to its base record type. Scheduled workflows, actions, and transitions execute only when the workflow is in released mode. Enable logging on the workflow definition if you want to continue generating execution logs.	Use this when you want the workflow to run for everyone. For more information about which users can initiate a workflow, see Users Who Can Run Workflows and Defining the Workflow Audience.

Creating a Workflow from a Workflow Template

Use workflow templates as a starting point for customized workflows to fit your business processes. Select a template and then edit the workflow definition properties, states, actions, and transitions as needed.



Important: This procedure assumes you're familiar with workflow elements. For more information, see Workflow Elements. For more information about workflow templates, see Workflow Templates Reference.

To create a workflow from a template:

1. In NetSuite, go to Customization > Workflow > Workflows > New.
2. Click **From Template**.
3. Click **Select** for one of the following workflow template types:
   - Journal Entry Basic Approval Template
   - Purchase Order Basic Approval Template
   - Sales Order Basic Approval Template
   - Lead Nurturing Template

NetSuite creates the workflow in the Workflow Manager, where you can edit its properties, states, actions, and transitions.

For more information about editing a workflow after you create it from a template, see Editing a Workflow.

> **Note:** When you create a workflow from a template, its Release Status is set to **Not Initiating** by default. You must change the release status to **Testing** to test the workflow. See Release Status for Workflow Instances.

Scheduling a Workflow

When you set up a workflow to run on a schedule, it runs on the results of a saved search. When you schedule a workflow, select a saved search and set the schedule when it runs. You can schedule the workflow to run one time, every 30 minutes, or at a certain time on a daily, weekly, monthly, or yearly basis. For more information about how NetSuite runs scheduled workflows, see Initiating a Workflow on a Schedule.

To create a scheduled workflow:

1. Create a saved search on the base record type you want the workflow for.

   > **Warning:** The saved search must include at least one filter on the **Criteria** subtab. Make sure you add enough filters so only the records you want are used in the workflow.

   For more information, see the help topic Defining a Saved Search.
2. Go to Customization > Workflow > Workflows > New. The workflow definition page appears.
3. Under **Basic Properties**, set the following basic properties:

Property	Description
Name	Name for the workflow. Can be up to 40 characters. Workflows on the Workflow list page appear with this name. This name is also used on the record for workflow instances on the **Active Workflows** and **Workflow History** subtabs.
ID	Optional script ID for the workflow. It must be lowercase, can't include spaces, and can't be more than 26 characters. Use script IDs if you plan to bundle and deploy the workflow and to another NetSuite account. Script IDs help prevent naming conflicts in other accounts. NetSuite prefixes this value with `customworkflow` when you save the workflow. You can change the script ID after you create the workflow. See Editing a Workflow Script ID.
Record Type	The record type where you want workflow instances to run. This record type can be a standard or custom NetSuite record type.

Property	Description
	You can specify only one base record type per workflow. If you select Customer, Transaction, or Item, you can also select a sub type. See Workflow Base Record.
Sub Type	Sub type or secondary record type for customer, transaction, or item record types. Hold down the Ctrl key to select more than one.
Description	Optional text description.
Owner	The user account that owns the workflow and receives email messages if errors occur during scheduled workflow actions. With a **Release Status** of **Testing**, only the workflow owner can start it. See Release Status for Workflow Instances.
Execute As Admin	Means the workflow runs as a user with an Administrator role and ignores the user role. Using this property may give users more access than you want. For more information about this property and usage guidelines, see Execute as Admin for Workflow Instances.
Release Status	Release status of the workflow. Set the status to **Released** to run on a schedule. With **Testing**, you can run a scheduled workflow immediately with the **Execute Now** button. See Testing Scheduled Workflows.
Keep Instance and History	Indicates whether workflow history is saved as the workflow run and after it finishes. Workflow history records are available in execution and error log records. You can select one of the following options: ▪ **Only When Testing**. When you select this option, workflow history records are kept only when the Release Status of the workflow is set to **Testing**. ▪ **Never**. When you select this option, workflow history records are never kept. ▪ **Always**. When you select this option, workflow history records are always kept. By default, the **Only When Testing** is selected when you create new workflows. If you select **Never**, instance and history records are available on the **Active Workflows** and **Workflow History** subtabs for the record while the workflow is running. When the workflow is done or canceled, related the history records. History records are never deleted for workflows that transition to a state with the **Do Not Exit Workflow** box checked. **Note:** This setting only impacts newly created history records. If you change the Keep Instance and History setting, existing workflows will not be impacted.
Enable Logging	Means that NetSuite generates a workflow execution log for each state entered during workflow execution. In testing mode, this box is checked by default, but in released mode, you need to check the box yourself. For more information about the workflow execution log, see Workflow Execution Log.
Inactive	Means that no new workflow instances initiate for the workflow and don't appear by default on the Workflow list page.

4. Under **Initiation**, select **Scheduled**, and then in the **Saved Search** list, select the saved search you created in Step 1.

   Note: To create an event-based workflow, see Creating a Workflow.

5. If you want the schedule to repeat, check the **Repeat** box.
6. Enter the following schedule options:

Option	Description
Frequency	How often you want the scheduled workflow to run. You can select one of the following options: ▪ Every 30 minutes ▪ Daily ▪ Weekly ▪ Monthly ▪ Yearly If you select a daily, weekly, monthly, or yearly schedule, you need to set more options to define the schedule. The default is every 30 minutes.
Scheduled From Date	Date when the schedule starts. The first run depends on the schedule type and options.
Scheduled Until Date	Date when the schedule ends. The last run depends on the schedule type and options.
Execution Time	Time of day when NetSuite runs the saved search and runs the workflow on the results. The default is midnight.

7. If you select a daily, weekly, monthly, or yearly schedule, set one of the following related options:

Schedule Type	Options
Daily	Set the interval for the number of days between runs or make it repeat every weekday.
Weekly	Set the interval for the number of weeks between runs and which days of the week it should run.
Monthly	Set a specific day of the month (for example, 8th day) or the day of the week (for example, second Tuesday). For both, you can also set the time period (for example, every 2 months). You can set the occurrence of the day using: ▪ first ▪ second ▪ third ▪ fourth ▪ last
Yearly	Set the specific day in a specific month (for example, 8th of September) or the day of the week (for example, second Tuesday in September). You can set the occurrence of the day using: ▪ first ▪ second ▪ third ▪ fourth ▪ last

8. Click **Save**. NetSuite creates the workflow and opens it in the Workflow Manager.

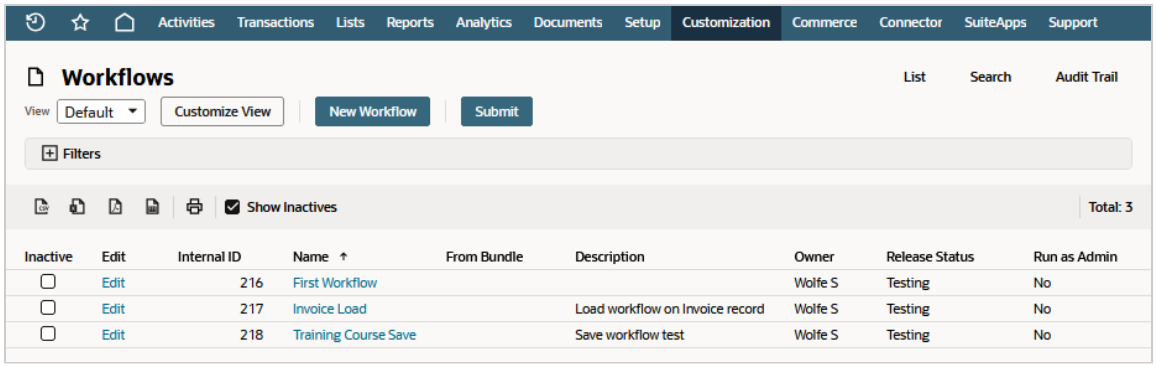
   You can continue to define the workflow by adding states. See Working with States.

Viewing Existing Workflows

Use the Workflows list page to view your existing workflows. By default, the list page shows all workflows except those marked as inactive. To view inactive workflows, check the **Show Inactives** box.

To access a workflow, you must have the full permission level for the base record the workflow was built on. Also, the related feature must be enabled in your account.

The following screenshot shows the Workflows list page:

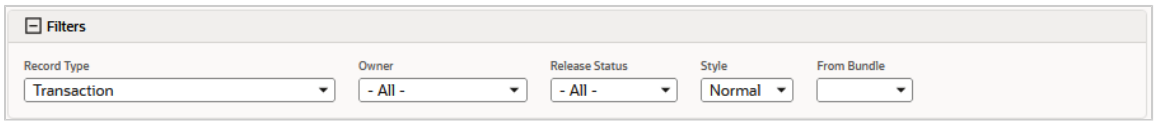


The following table describes the tasks you can complete from the Workflow list page:

Task	Description
Create a new workflow	Click **Create Workflow** to open the workflow definition page. See Creating a Workflow and Scheduling a Workflow.
Edit a workflow	Click **Edit** to change a workflow. See Editing a Workflow.
Search for workflows	Click **Search** to find workflows definitions. See Workflow Searches.
Filter the workflows list	Use the **Filters** section to show only workflows with specific properties. See Filtering the Workflow List Page.
Mark workflows as inactive	Use the **Inactive** column to mark workflows as inactive. See Inactivating a Workflow.
Customize the workflow list page	You can customize which columns appear on the Workflow list page. See the help topic Customizing Sublist Views.

Filtering the Workflow List Page

Use the **Filters** list on the Workflows list page to refine the workflows shown and find a specific workflow or workflow type.



The following tables describes the available filters:

Filter Name	Description
Record Type	Base record type for a workflow. If you want to see workflows for Customer, Transaction, or Item record types, the list shows all workflows based on their sub types. You can't filter by sub type.

Filter Name	Description
	See Workflow Base Record.
Owner	User account set as the Owner of the workflow.
Release Status	Release status of the workflow. You can select **Not Initiating**, **Suspended**, **Testing**, and **Released**. See Release Status for Workflow Instances.
Style	Style for the display. Select **Normal**, **Grid**, or **Report**. The default view is **Normal**.
From Bundle	If your account has workflows installed as part of a bundle, this filter lets you find them by bundle ID. You can select **Any**, **None**, or a specific bundle ID.

To filter the workflows on the Workflow list page:

1. Go to Customization > Workflow > Workflows.
2. Expand the **Filters** section and select the filters you want.

   The Workflows list page automatically updates with the appropriate filters.

Editing a Workflow

You can edit an existing workflow to change its properties or elements, or create new ones. When you edit a workflow, you can make changes to the following workflow elements:

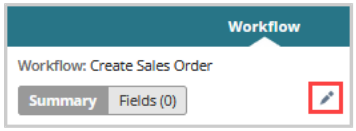
- Workflow definition – includes basic properties, initiation properties, and conditions. The changes you make to workflow initiation conditions or workflow definition properties affect only future workflow instances. The changes don't affect workflows that are currently running.
- States – includes creating, editing, and deleting actions, transitions, and custom fields.
- Actions – includes action properties and conditions.
- Transitions – includes transition properties and conditions.
- Workflow and state fields.

You can also edit a workflow definition to change the script ID for the workflow. See Editing a Workflow Script ID. In addition, you can copy workflows and inactivate workflows. For more information, see Copying a Workflow and Inactivating a Workflow.

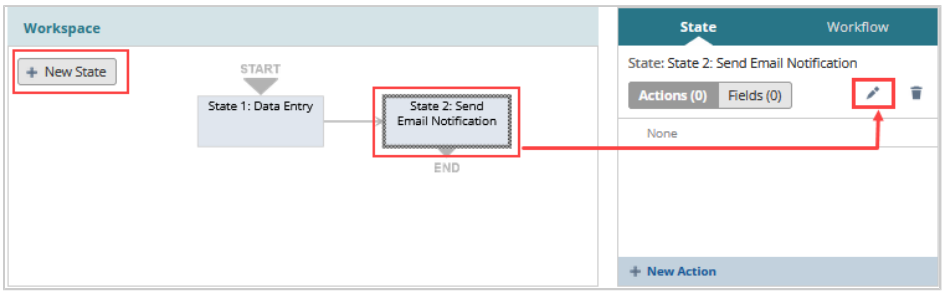
Note: You can't change the base record type for a workflow after you create it, but you can edit its sub types.

To edit a workflow:

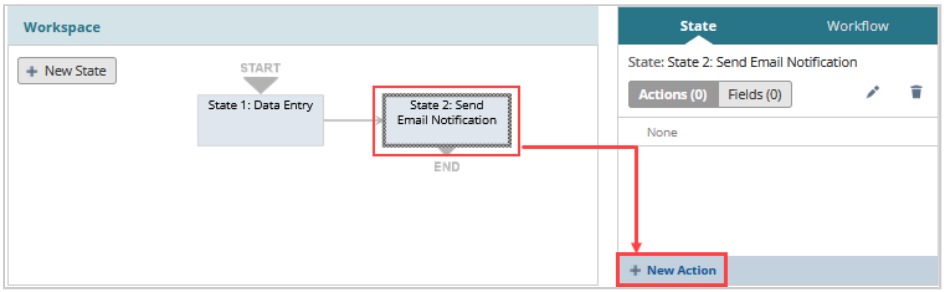
1. Go to Customization > Workflow > Workflows.
2. Find the workflow that you want to edit and click **Edit**.
3. Do any of the following:
   - To edit the workflow definition, click the **edit** icon on the **Workflow** tab in the context panel. On the workflow definition page, edit the workflow definition and click **Save**.

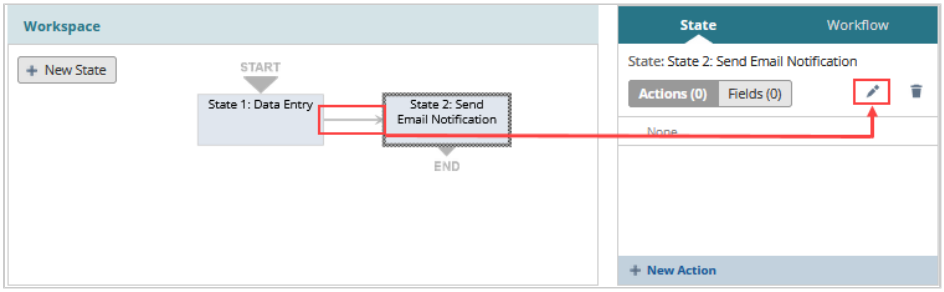
   - To edit a state, select the state and click the **edit** icon on the **State** tab in the context panel. In the Workflow State window, edit the state properties and click **Save**.



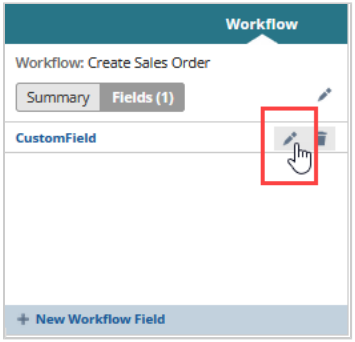
- To edit an action, select the state that contains the action that you want to change. On the **State** tab in the context panel, hover over the action and click the **edit** icon. On the Workflow Action page, edit the action properties and click **Save**.



- To edit a transition, select the transition that you want to change. On the **Transition** tab of the context panel, click the **edit** icon. On the Workflow Transition page, edit the transition properties and click **Save**.



- To edit a workflow field, click the **Fields** tab on the context panel. Click the **edit** icon. Make your changes and click **Save**.
- To edit a state field, select a state in the diagrammer, and click the **Fields** tab on the context panel. Click the **edit** icon. Make your changes and click **Save**.



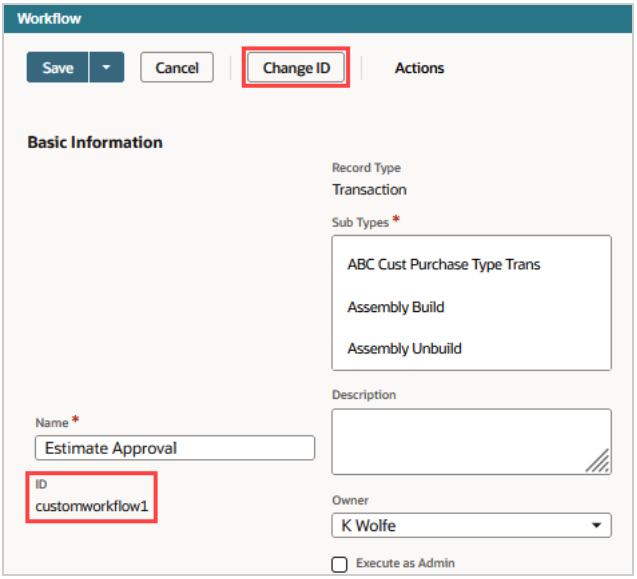
Editing a Workflow Script ID

After you create a workflow, you can edit its script ID on the workflow definition page. You can edit the ID to change the script ID that you set when you created the workflow, or override the one that NetSuite generated automatically.

To edit the script ID for a workflow definition:

1. Go to Customization > Workflow > Workflows to open the Workflow list page or search for a workflow.

   See Viewing Existing Workflows and Workflow Searches.
2. Click **Edit** to open the workflow in the Workflow Manager.
3. On the workflow definition page, click **Change ID**.



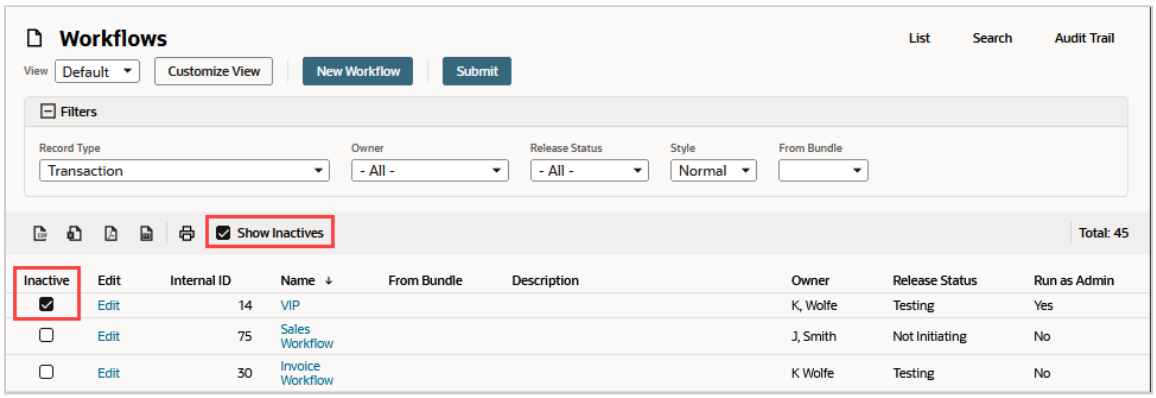
4. In the **Change Script ID** window, enter a new script ID. You can prefix the ID with an underscore (_) for readability.

5. Click **Save**.

Inactivating a Workflow

You can set a workflow to inactive on the workflow definition page or on the Workflows list page. Inactivate a workflow if you don't want it to run or appear by default on the Workflows list page. You can see inactive workflows by checking the **Show Inactives** box on the Workflows list page.

Inactivating a workflow has the same affect as setting its release status of **Not Initiating**. For more information about release statuses, see Release Status for Workflow Instances.



Note: You can also check the **Inactive** box on the workflow definition page to inactivate a workflow.

To inactivate a workflow:

1. Go to Customization > Workflow > Workflows.
2. On the Workflows list page, check the **Show Inactives** box.
3. (Optional) Set a filter. See Filtering the Workflow List Page.
4. Check the **Inactive** box for the workflow that you want to inactivate.
5. Click **Submit**.

Note: This change doesn't affect workflows that are currently running and applies only to new instances.

Copying a Workflow

You can copy a workflow in the Workflow Manager. Create a copy of a workflow to test complicated workflows or use it as a starting point for a new workflow. To copy a workflow, use the Make Copy command on the **More** menu in the Workflow Manager.

When you copy a workflow, NetSuite makes the following changes to the copy:

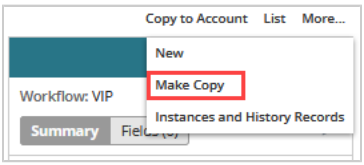
- Appends a number to the workflow name. For example, the workflow name **First Workflow** becomes **First Workflow (2)**.
- Appends an underscore (_) and number to the workflow script ID and any workflow or state field. For example, a workflow script ID of **customworkflow_firstworkflow** becomes **customworkflow_firstworkflow_2**.
- Sets the release status of the new workflow to **Not Initiating**.

To create a copy of a workflow:

1. Go to Customization > Workflow > Workflows.

You can also search for a workflow. For more information, see Workflow Searches.

2. Click **Edit** to open the workflow in the Workflow Manager.
3. Click **More** and select **Make Copy**.



NetSuite opens the workflow copy in the Workflow Manager.

4. Edit the copy of the workflow. See Editing a Workflow.

Using SDF and Copy to Account

You can use SuiteCloud Development Framework (SDF) to manage custom objects as part of file-based customization projects. For information about SDF, see the help topic SuiteCloud Development Framework.

You can use the Copy to Account feature to copy a workflow to another one of your accounts. To copy a workflow, in the Workflow Manager, click **Copy to Account**.

For information about Copy to Account, see the help topic Copy to Account.

Working with States

A workflow can have as many states as your business process needs. Every NetSuite workflow must have at least one state. Workflows without any states can't be initiated to run for a record, even if the workflow is set to Running. A workflow can have only one start state, called the entry state. It can have multiple end states, called exit states. A workflow with only one state is also known as a single state workflow.

For an overview of states and state functionality in SuiteFlow, see Workflow States and SuiteFlow Trigger Execution Model.

After you create a workflow, the Workflow Manager creates a default state called State 1. You can edit this state to change its properties and add actions, transitions, and state fields. You can also add more states or delete existing ones. A workflow must have at least two states before you can create transitions. You can create all the states required by the business process first, and then edit them and create transitions between the states.

> **Note:** As you set up the workflow and add states, you can use the diagrammer to drag and drop states to show the flow of the business process.

The following table describes where you can get more information about working with states:

Task	For more information
Creating a state in a workflow	Creating a State
Editing existing state	Editing a State
Deleting a state and the effects on subsequent workflow instances	Deleting a State

Task	For more information
Creating a state field	Creating and Using State Fields
Working with exit states	Exit States
Creating a non-exiting state	Non-Exiting Workflow States

Creating a State

Use the **New State** button in the workflow diagrammer to create a state in a workflow. After you create the state, edit it to change its properties, and create actions and transitions.

Note: When you create a new state, you don't enter any state properties. Edit the state to add any properties you need. See Editing a State.

To create a workflow state:

1. Create a new workflow or open an existing workflow.

   For more information, see Creating a Workflow, Viewing Existing Workflows, or Workflow Searches.
2. In the diagrammer or the context panel, click **New State**. The new state appears in the diagrammer.

3. Edit the state to change its properties and add actions and transitions. See Editing a State

Editing a State

Edit an existing state to change its properties or create and edit workflow elements. Edit a state to make changes to the following workflow elements:

- State properties
- Actions, including action properties and conditions
- Transitions, including transition properties and conditions
- State fields

To edit a state:

1. Open the workflow that contains the state that you want to edit. For more information, see Editing a Workflow.
2. Select the state in the diagrammer and click the **Edit** icon on the **State** tab in the context panel.

3. Edit the following state properties:

Property	Description
Workflow	Name of the workflow that contains the state. This field is not editable.
Name	Name of the state. If you change the name of an existing state, the **Workflow History** subtab shows states that were renamed while the workflow runs. See Deleted and Renamed States.
Script ID	Custom script ID for the state. NetSuite prefixes the ID with `workflowstate`. To edit this field, see Editing a Workflow State Script ID.
Description	Optional description for the state.
Do Not Exit Workflow	Means that the workflow instance doesn't end when it finishes the actions in this state. If you create a transition from this state to another state, this field is disabled. Also, this field is disabled if there is a transition from this state to another state. For more information about using this property, see Non-Exiting Workflow States.
Start State	If checked, this is the entry state in the workflow. This field is disabled if it's the current start state. If you create a transition to this state, or if you check this box for another state, NetSuite clears this box.

4. To change actions, on the **Actions** subtab, click **Edit** next to an action. For more information, see Working with Actions.
5. To change transitions, on the **Transitions** subtab, click **Edit** next to a transition. For more information, Working with Transitions.
6. To change custom fields, on the **Fields** subtab, click the field name to edit it.
7. To save the changes to the state, click **Save**.

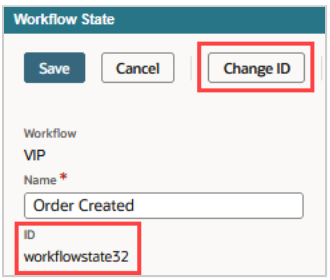
Editing a Workflow State Script ID

When you create a state, NetSuite automatically gives it a script ID. Change the script ID if you want to use it as a reference in a script.

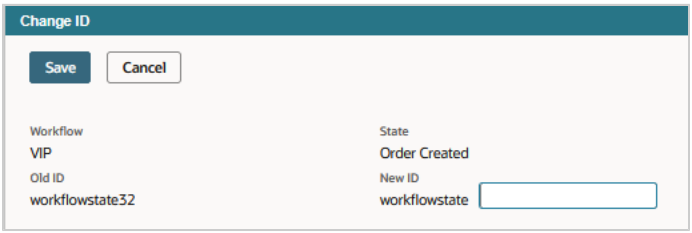
The script ID must be must be lowercase, can't have spaces, and can't be longer than 27 characters. NetSuite prefixes the ID with `workflowstate` when you save.

To edit the script ID for a workflow state:

1. Open the workflow that contains the state that you want to edit. For more information, see Editing a Workflow.
2. Select the state in the diagrammer and click the **Edit** icon on the **State** tab in the context panel.
3. Click **Change ID.**



4. In the **Change Script ID** window, enter a new script ID. You can prefix the ID with an underscore (_) for readability.



5. Click **Save**.

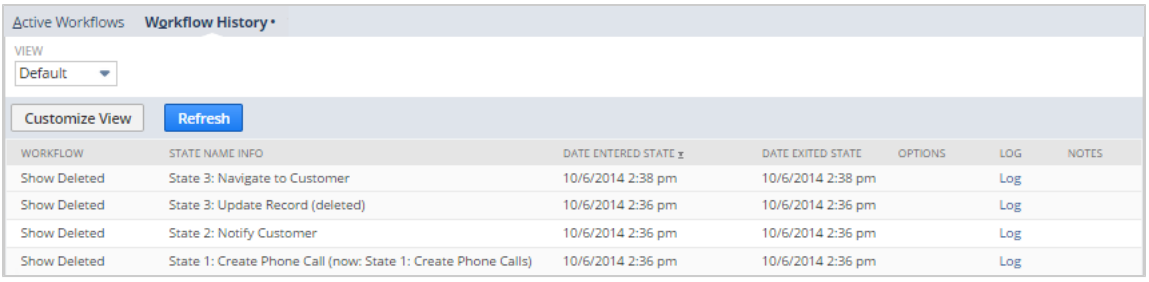
Deleting a State

Delete a state to remove it from the workflow. If there aren't any records in an active workflow instance currently in the state, you can delete a state with any release status. Also, if you delete a state that has transitions, those transitions are also deleted.

> **Note:** If you set the release status of a workflow instance to Testing or Not Initiating, or make the workflow definition inactive, it doesn't stop workflows that are already running. You can't delete the current state of a running workflow instance.

For any workflow instance, the history shows any state that was deleted after the workflow entered the state. The workflow history shows the state for any running or completed workflow with **(deleted)** appended to it. To view the workflow history, go to the record that is associated with the workflow, click the **System Information** subtab, and then click the **Workflow History** subtab.

The following screenshot shows a workflow history with a deleted state:



To delete a state:

1. Open the workflow that contains the state that you want to delete. For more information, see Editing a Workflow.
2. In the diagrammer, select the state you want to delete.
3. Click the **Delete** icon on the **State** tab in the context panel. Any incoming or outgoing transitions are also deleted.

   > **Note:** You can also open the Workflow State window, and select **Delete** from the Actions menu.

4. Click **Yes** in the popup that appears.

Working with Actions

Each state in a workflow can contain actions. The actions used in a workflow depend on the business processes you're automating. Each state can contain one or more actions. Each action has a basic set of properties that apply to all actions. Each action also has specific properties based on the values of the record in the workflow, which you use to configure the action. For an overview of actions in SuiteFlow, including action properties, triggers, and conditions, see Workflow Actions.

For a list of all actions available in SuiteFlow, see Workflow Actions Overview.

The following table describes where you can get more information about working with actions:

Task	Topic with more information
Create an action in a state	Creating an Action
Edit an existing action	Editing an Action
Delete an action	Deleting an Action
Order actions in a state	Ordering Actions
Reorder actions in a state	Reordering Actions
Move an action to another state	Moving an Action
Copy an action	Copying an Action
Use an action group to use the same condition with multiple actions	Using Action Groups
Use a sublist action group to execute actions on Items sublist lines	Using Sublist Action Groups
Set an action to execute on a schedule	Scheduling an Action
View a list of all available actions and links to more information	Workflow Actions Overview
Examples of using actions in a workflow, including the Add Button action and executing an action with a saved search as a condition	Action Examples

Creating an Action

You can create an action from the Workflow State window or you can click the **New Action** button on the context panel. Most action properties are the same for all action types.

> **Note:** When you create an action, the context panel displays it according to its trigger category. However, actions run in the order they appear on the **Actions** subtab of the Workflow State window, based on their trigger type. For more information about how actions run in a state based on their trigger type, see Action Triggers.

To create an action:

1. Open the workflow.

   See Viewing Existing Workflows and Workflow Searches.
2. In the diagrammer, slect the state where you want to add the action, then click the **New Action** icon in the context panel.

3. In the New Action window, click the link for type of action you want to create. For information about action types, see Workflow Actions Overview.
4. Enter the following basic properties. The properties that appear depend on the action type.

Property	Description
Workflow	Name of the workflow that contains the state where you're creating the action. This field is not editable.
State	Name of the state where you want to include the action. This field defaults to the current state, but you can create the action in another state or move the action to another state. For more information, see Moving an Action.
Type	Type of action. This field is not editable.
Script ID	Optional script ID for the action. This value must be lowercase, it can't include spaces, and it can't be more than 26 characters. NetSuite prefixes the value with `workflowaction`. If you do not specify a script ID, NetSuite generates a unique ID. You can edit the script ID after you create the action. See Editing an Action.
Insert Before	Where the action should appear in the list for the state's actions. Actions for the same trigger type run in the order listed on the **Actions** subtab for the state. Use this field to reorder actions in a state. See Reordering Actions.
Trigger On	Trigger type for this action. This property is required. For more information, see Workflow Triggers and Triggers Reference.
Event Types	The activity that created, viewed, or updated the record. The action only executes if the event occurred. For example, you can set the action to run only if a record was copied. For more information, see Workflow Event Types and Event Types Reference.
Contexts	The NetSuite feature used to create, view, or update the record. The workflow instance initiates only if this context occurred. For example, you can make the workflow instance start only when the record for the workflow was created by a web service. For more information, see the help topics Execution Contexts and Execution Context Types.
Client Fields	Fields that, if changed, affect another field. Shows editable record fields. This property appears only for actions that can be executed in the browser. You must select a client trigger for the **Trigger On** property. For more information, see Using Conditional Fields with Actions.
Inactive	Indicates the action doesn't execute. Use this option to keep an action without deleting it, for example, when you troubleshoot state behavior.

5. Optionally, to enter a condition for the action, use the Condition Builder or Formula Builder to enter a condition.

   The action runs only if the condition criteria is met. Use a condition to limit when an action runs, for example, only for a specific user. For more information, see Action Conditions.
6. (Optional) Select a saved search as a condition for action execution. The action executes if the current record in the workflow is returned in the saved search results.

   To appear in the dropdown list, the saved search record type must match the base record type for the workflow. For more information, see Executing an Action with a Saved Search Condition.
7. (Optional) Enter a schedule. The action executes on the schedule you enter after the record enters the state in the workflow. You must select **Scheduled** for the **Trigger On** property. For more information, see Scheduling an Action.

8. Under **Parameters**, enter the properties specific to the action. See Workflow Actions Overview.
9. Click **Save.** The action appears in the context panel under its trigger type category and on the **Actions** subtab for the workflow state.

Editing an Action

Edit an existing action to change its properties or action conditions. Edit an action, for example, when you're testing and troubleshooting, or after you move or copy the action from another state.

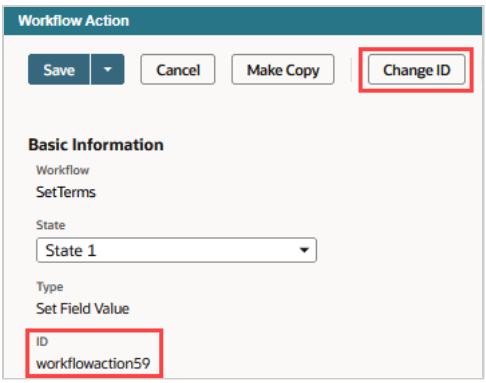
To edit an action:

1. Open the existing workflow that contains the action that you want to edit.

   For more information, see Viewing Existing Workflows and Workflow Searches.
2. Select the state in the diagrammer, hover over the action in the context panel, and click the **Edit** icon.
3. Edit any of the following basic properties. The properties that you see depend on the action type.

Property	Description
State	Name of the state where you want to include the action. This field defaults to the current state, but you can create the action in another state or move the action to another state. For more information, see Moving an Action.
Script ID	Optional script ID for the action. This value must be lowercase, it can't include spaces, and it can't be more than 26 characters. NetSuite pr fixes the value with `workflowaction`. If you do not specify a script ID, NetSuite generates a unique ID. You can edit the script ID after you create the action. See Step 5 below.
Insert Before	Where the action appears in the list for the state's actions. Actions with the same trigger type run in the order listed on the **Actions** subtab. Use this field to reorder actions in a state. For more information, see Reordering Actions.
Trigger On	Type of trigger for this action. This property is required. For more information, see Workflow Triggers and Triggers Reference.
Event Types	The activity that created, viewed, or updated the record. The workflow instance initiates only if the event occurred. For example, you can set the action to execute only if a record was copied. For more information, see Workflow Event Types and Event Types Reference.
Contexts	The NetSuite feature used to create, view, or update the record. The workflow instance initiates only if the context occurred. For example, you can make the workflow instance start only when the record for the workflow was created by a web service. For more information, see the help topics Execution Contexts and Execution Context Types.
Client Fields	Fields that, if changed, affect another field. Shows editable record fields. This property appears only for actions that can be run in the browser. You must select a client trigger for the **Trigger On** property. For more information, see Using Conditional Fields with Actions.

4. To make the state inactive, check the **Inactive** box. The action won't run again, even for currently active workflow instances.
5. To change the script ID, click **Change ID**.



In the Change Script ID window, enter a new script ID. You can prefex the ID with an underscore (_) for readability.

Click **Save**.

6. To edit any condition, see Working with Conditions.
7. To edit the saved search, select a new saved search. To appear in the dropdown list, the saved search record type must match the workflow base record type. See Executing an Action with a Saved Search Condition.
8. Under **Parameters**, edit the properties for the action type. See Workflow Actions Overview.
9. Click **Save**.

Deleting an Action

Delete a workflow action so it won't process on subsequent workflow runs. You can delete an action from the **Workflow State** window or the context panel.

> **Note:** You can also make an action inactive to temporarily stop it from running. See Editing an Action.

To delete an action:

1. Open the workflow that contains the action that you want to delete.

   See Viewing Existing Workflows or Workflow Searches.
2. In the diagrammer, select the state with the action you want to delete. Hover over the action in the context panel and click the **Delete** icon.
3. (Optional) Select the state in the diagrammer and click the **Edit** icon for the state in the context panel.

   In the Workflow State window, click **Edit** next to the action and select **Delete** from the Actions menu.

Ordering Actions

Earlier, new actions were added to the end of a workflow actions list and could be rearranged in any order.

Starting in 2015.2, actions are organized actions the same way in both the global list and on the context panel. Workflow actions must be ordered by their triggers, according to the following order:

1. Entry
2. Exit
3. Before Record Load
4. Before User Edit
5. Before Field Edit
6. After Field Edit
7. After Field Sourcing
8. Before User Submit
9. After Record Submit
10. Scheduled

When you add a new action to a workflow, it's added right after the last action with the same trigger. If there are no other actions, SuiteFlow moves up the trigger order and tries to do the same for the preceding triggers. If it can't find any, the new action is added at the top of the actions list.

When you change the trigger of an existing action, the action is moved the same as a newly-added action. This position is right after the last action with the same trigger or a preceding trigger, or to the top of the list if none are found.

When you want to move an action, if there are other actions with the same trigger, you can place the action before or after an action with the same trigger. Or, you can place it right after the last action with the preceding trigger. SuiteFlow moves up the trigger order to find the first **last action** available. If no such actions exist, you can move the action to the top of the list.

If you try to move an action somewhere it can't go, you see an error explaining where you can move it.

> **Note:** You can see the global action order in the Workflow State window. In the context panel, actions are grouped by trigger type, so you see only the order of actions for the same trigger type.

Reordering Actions

The order of the workflow actions on the **Actions** subtab of the Workflow State window controls the order actions run for each trigger type. If two actions use the same trigger type, the action listed first on the subtab runs before the second, provided the condition requirements are met.

Beginning in 2015.2, there are rules that control how you can reorder actions within a state. For more information, see Ordering Actions.

> **Note:** For more information about the order that actions run within a state, see Action Triggers and SuiteFlow Trigger Execution Model

There are two ways reorder the actions. You can click and drag the icon to the left of **Edit Actions** subtab in the Workflow State window. Or, you can use the **Insert Before** property for the workflow action.

To reorder actions:

1. Open the existing workflow that contains the actions that you want to reorder.

   See Viewing Existing Workflows or Workflow Searches.
2. In the diagrammer, select the state with the actions you want to reorder and click the **Edit** icon for the state in the context panel.
3. On the Actions subtab, click **Edit** beside the action, and drag it to a new location. If you try to move an action somewhere it can't go, you see an error explaining where you can move it.
4. (Optional) To reorder an action with the **Insert Before** property, click **Edit** next to the action you want to reorder.

   In the Workflow Action window, select a new value for the **Insert Before** property, and click **Save**.
5. Click **Save**.

Moving an Action

You can move a workflow action to a different state in the same workflow. Use the **State** property to choose the state where you want it to go. For example, you may move an action when you troubleshoot or redesign a workflow so it runs in a different state.

Use the following guidelines for moving an action:

- The action keeps all its original properties in the new state. It appears at the end of the list on the **Actions** subtab. You can reorder the action to change its position.
- You can't move actions in an action group, but you can copy them. See Copying an Action.
- You can't move actions that reference a state field. If you move one and try to save, you get an error. Edit the action and fix the error before you move it.
- If an action has a condition, the condition becomes read-only after you move the action. Edit the action in the new state to change the condition.
- The parameters for a Set Field Value action are blank after you move it.

To move an action:

1. Open the existing workflow that contains the action that you want to move.

   See Viewing Existing Workflows or Workflow Searches.
2. In the diagrammer, select the state with the action you want to move. Hover over the action in the context panel, and click the **Edit** icon.
3. In the Workflow Action window, select a new value for the **State** property and click **Save**.
4. Click **Save**.
5. Edit the action in the new state. You can reorder it or edit the action and make the condition editable. See Editing an Action.

Copying an Action

You can copy a workflow action within the same workflow state. After you copy it, the copy opens in the Workflow Manager so you can edit it.

You can also copy actions from an action group. When you do, the copy appears at the end of the action group list. For more information about action groups, see Using Action Groups.

To copy an action:

1. Open the existing workflow that contains the action that you want to copy.

   See Viewing Existing Workflows or Workflow Searches.
2. In the diagrammer, select the state with the action that you want to copy. Hover over the action in the context panel and click the **Edit** icon.
3. In the Workflow Action window, click **Make Copy**. The copy of the action opens in the Workflow Action window.
4. Edit the copy and click **Save**. See Editing an Action.

Using Action Groups

Use action groups to run multiple actions based on the same set of conditions. Action groups make workflows easier to maintain because you only need to set the conditions and other settings one time, on the parent group.

For example, in approval workflows, the Approve and Reject buttons are added to the form with two Add Button actions. If these two buttons share the same conditions, an action group lets you group them, so you only have to enter the action condition one time for both actions.

To use action groups, create the group, set the conditions, and add actions within the group. You can create action groups only for actions that execute on a server trigger, including Entry, Exit, and Scheduled. You can't create action groups for actions that execute on a client trigger.

To run actions on Items sublist lines, use sublist action groups. For information, see Using Sublist Action Groups.

To create an action group:

1. Open in edit mode the existing workflow that contains the state where you want to create an action group.

   See Viewing Existing Workflows and Workflow Manager Interface View and Edit Modes.
2. In the diagrammer, select the state and click the **Edit** icon on the **State** tab in the context panel.
3. Click **New Group**. The Workflow Action Group window appears with the **Type** field set to **Group Actions**.
4. In the **Workflow Action Group** window, enter the following properties for the action group:

Property	Description
Insert Before	Where the action group appears in the current list of actions for the state. Actions for the same trigger type run in the order they appear on the **Actions** subtab for the state or specific action group. Use this field to reorder actions in the group. For more information, see Reordering Actions.
Trigger On	Trigger type for this action group. This property is required. For more information, see Workflow Triggers and Triggers Reference. **Note:** If you change the trigger type for the action group, you get an error if any actions in the group aren't compatible with the new trigger type.
Event Types	The activity that created, viewed, or updated the record. The actions in the group run only if that event happens.

Property	Description
	For example, you can set an action to run only if a record is copied. For more information, see Workflow Event Types and Event Types Reference.
Contexts	The NetSuite feature used to create, view, or update the record. The workflow instance starts only if the context happens. For example, you can start the workflow instance only when the record for the workflow is created by a web service. For more information, see the help topics Execution Contexts and Execution Context Types.

5. To make the group inactive, check the **Inactive** box. The next time the workflow runs, the actions in the group don't run.
6. To enter a condition for the action group, use the Condition Builder or Formula Builder to enter a condition.

   The actions in the group run only if the condition criteria is met. Use a condition to limit when group actions run, for example, only for a specific user. For more information, see Working with Conditions.
7. (Optional) Select a saved search as a condition for action group execution. The actions in the group run if the current record in the workflow is found by the saved search.

   To appear in the dropdown list, the saved search record type must be the same as the base record type for the workflow. For more information, see Executing an Action with a Saved Search Condition.
8. (Optional) Enter a schedule. Group actions run on the schedule you enter after the record enters the workflow state. For more information, see Scheduling an Action.
9. Click **Save**. The new group appears at the bottom of the **Actions** subtab.

   You can also view action groups on the **State** tab in the context panel. For details, see Workflow Context Panel.
10. To add actions, click **Edit** next to the group.
11. At the bottom of the Workflow Action Group window, click **New Action** to add an action to the group. For more information, see Creating an Action.

    You can also add actions to groups from the **State** tab in the context panel. Hover over an action group name to see the Add, Edit, and Delete buttons.

Using Sublist Action Groups

Item Sublist Approval in SuiteFlow

You can run actions on sublist lines as part of a transaction record workflow using Sublist Action Groups. A Sublist Action Group is a group of actions assigned to a workflow state that run on each line of a sublist. Whether actions run during a workflow state depend on the group and group action conditions. The sublist action group runs only if its conditions are met. For the group to process, the group's condition must evaluate to true.

If the group's condition is true, the workflow goes through all sublist lines and tries each in the group. If a group action's condition is true for a sublist line, the action runs on that line. All actions are checked for a sublist line before moving to the next line. After an action is evaluated, the result is immediately considered for the next group actions.

For example, consider a sublist line's Description field that has a value of Val1. A sublist action group has the two following Set Field Value actions:

- Set Field Value action 1 sets the sublist line's Description field value to Val2.
- Set Field Value action 2 has a condition that it runs if the sublist line's Description field's value is Val2.

Both Set Field Value actions run. The first action doesn't have a condition and changes the Description field to Val2. When the second action is checked, it sees the new value and runs next.

You can include the following action types in Sublist Action Groups:

- Set Field Value. This action lets you set values for record body, custom workflow state, and sublist fields. You can also set values for these fields based on values of the same field types (record body, workflow state, sublist).
- Create Record. This action lets you create a new record based on record body, custom workflow state, or sublist field values. For example, when a training item is ordered on a sales order record, you can create a task record for the training supplies.
- Send Email. This action lets you send an email message for each item line. You can use line fields, body fields, workflow and state custom fields in the subject and body of the email message. To access the currently in an email template, use the prefix **currentLine**.
- Return User Error. This action returns a user error for the record. You can use line fields, body fields, workflow and state custom fields in the subject and body of the message. Because the action runs on the server, the error appears as a full-page message.

You can use Sublist Action Groups on all server triggers, but not on client triggers. For information about workflow triggers, see Triggers Reference.

There are some things to keep in mind about executing sublist action groups and the actions within them on the Before Load Trigger. For details, see Executing Sublist Action Groups on the Before Load Trigger.

You can use Sublist Action Groups with any workflow definitions created on transaction records, but not on opportunity records. To configure a sublist action group, first create the group, add actions to it, and configure these actions. For more information, see Creating a Sublist Action Group, Adding Actions to Sublist Action Groups and Configuring Actions for Sublist Action Groups.

Creating a Sublist Action Group

You can run actions on sublist lines as part of a transaction record workflow using Sublist Action Groups. A Sublist Action Group is a group of actions assigned to a workflow state that run on each line of a sublist. For more information, see Using Sublist Action Groups.

To create a sublist action group:

1. Open in edit mode the existing workflow that contains the state where you want to create a sublist action group.

   See Viewing Existing Workflows and Workflow Manager Interface View and Edit Modes.
2. In the diagrammer, select the state and click the **Edit** icon on the **State** tab in the context panel.
3. Click **New Sublist Group**. The Sublist Action Group window appears with the **Type** field set to **Sublist Action Group**.
4. In the Workflow Action Group window, enter the following properties for the action group:

Property	Description	Required
Insert Before	Where the action group appears in the current list. Actions with the same trigger type run in the order they appear on the **Actions** subtab for the state or for action group.	No

Property	Description	Required
	Use this field to reorder actions in the group. See Reordering Actions.	
Trigger On	Trigger type for this group. This property is required. You can't use sublist action groups on client triggers, only on server triggers. For more information, see Workflow Triggers and Triggers Reference. **Note:** If you change the trigger type for the action group, you get an error if any actions in the group aren't compatible with the new trigger type.	Yes
Event Types	The activity that created, viewed, or updated the record. The actions of the action group run only if this happens. For example, you can limit the action to run only if a record is copied. You can select multiple event types. For more information, see Workflow Event Types and Event Types Reference.	No
Contexts	The NetSuite feature used to create, view, or update the record. The workflow instance starts only if the context is met. For example, you can initiate the workflow instance only when the record for the workflow is created by a web service. For more information, see the help topics Execution Contexts and Execution Context Types.	No

5. To make the group inactive, check the **Inactive** box. The next time the workflow runs, the actions in the group don't run. Inactive sublist action groups are dimmed in the context panel.
6. To enter a condition for the action group, use the Condition Builder or Formula Builder.

   The group runs only if the condition criteria are met. Use a condition to limit when group actions runs, for example, only for a specific user. For more information, see Working with Conditions.

   Be aware that sublist action group's condition can use only record body fields. However,the actions within the sublist action group can use both record body and sublist fields.
7. (Optional) Select a saved search as a condition for action group execution. The actions in the group run if the current record in the workflow is found by the saved search.

   The saved search record type must be the same as the base record type for the workflow to appear in the dropdown list. For more information, see Executing an Action with a Saved Search Condition.
8. In the **Parameters** section of the Sublist Action Group window, the Items sublist is selected in the **Sublist** dropdown list.
9. (Optional) Enter a schedule. The actions in the group run on the schedule you set, after the record enters the workflow state. For more information, see Scheduling an Action.
10. Click **Save**. The new group appears in the action list for the state on the **Actions** subtab. You can also view it on the **State** tab in the context panel. For details, see Workflow Context Panel.

After you save the new group, you can add actions to it. For more information, see Adding Actions to Sublist Action Groups.

Note: Sublist Action Groups work with the **Items** and the Expense Report **Expenses** sublists only. You can't use Sublist Action Groups for any other type of sublist.

Adding Actions to Sublist Action Groups

After you've created a sublist action group, you can start adding actions to it. For information about creating and using sublist action groups, see Creating a Sublist Action Group.

To add an action to a sublist action group:

1. In the context panel's **State** tab, hover over to a sublist action group name. You'll see icons to add, edit, or delete the group from the state.
2. Click the **+** icon.
3. In the New Action window, click the action type you want to add to the group. You can select from the following actions:
   - Create Record Action
   - Return User Error Action
   - Send Email Action
   - Set Field Value Action
4. Configure the selected action. See Configuring Actions for Sublist Action Groups.

Configuring Actions for Sublist Action Groups

Be aware of the following as you configure actions for your sublist action groups:

- You can use Items sublist fields in conditions, formulas, and action parameters.
- Sublist fields appear alphabetically in field lists and have the suffix (Line), such as Item (Line).
- To reference a body field in a formula, use {fieldid}. For example, the memo body field is referenced with {memo}.
- To reference a sublist field in a formula, use {line.fieldid}. For example, the description sublist field is referenced with {line.description}.
- Body fields in conditions and parameters don't have a prefix or suffix.
- Sublist fields in conditions and parameters ise the prefix Line : . For example:
  - In the action list of the sublist action group, in the Parameters column, parameters are listed in the following format: Line : Description = Line : Item : Store Description .
  - In the action list of the sublist action group, in the Condition column, conditions are listed in the following format: Condition : Line : Description = test.
  - On the Set Field Value action detail page, in the Condition field, conditions are listed in the following format: Condition : Line : Description = test.

Executing Sublist Action Groups on the Before Load Trigger

Be aware of the following for sublist action groups and the actions within sublist action groups that are set to trigger on Before Record Load:

- You can get Items sublist field values on new and existing records with the Before Record Load trigger, for example, to evaluate in a condition.
- You can set body fields, Items sublist fields, workflow, and state field values on new and copied records with the Before Record Load trigger.
- You can't set body or Items sublist fields on existing records with the Before Record Load trigger.
- You can set workflow and state fields on existing records with the Before Record Load trigger.

Scheduling an Action

You can use the Scheduled trigger with an action to create a scheduled action. Scheduled actions only run after the record enters the state for that action. For example, use a scheduled action to send an email a

set amount of time after a record enters a state. For more information about how scheduled actions work, see the Scheduled Trigger.

Important: You can only schedule Create Record, Initiate Workflow, Send Campaign Email, Send Email, Subscribe To Record, or Custom actions. These actions run only if the workflow is in released mode. See Release Status for Workflow Instances.

To schedule an action:

1. Create an action. See Creating an Action.

   Note: Make sure you set the **Trigger On** property to **Scheduled**.

2. Under **Schedule** in the **Workflow Action** window, enter the following properties:

Property	Description
Delay	Choose **Delay** if you want the action to run a certain number of hours or days after the record enters the state. Number of time units set in the **Unit** property before the action processes. For example, if you set the **Unit** property to **Hour** and enter **1** for **Delay**, the action runs 1 hour after the record enters the state.
Time of Day	Choose **Time of Day** if you want the action to run at a specific time. When you choose this option, the **Start Time** field is required. The action runs at a specific time of day. Enter **Start Time**, **Recurrence**, and **Unit**.
Start Time	Time of day the action runs.
Recurrence	Number of time units before the action runs again. **Note:** If the condition isn't met when the action is scheduled to process, NetSuite waits and tries again at the next recurrence.
Unit	Unit of time for **Delay** and **Time of Day**. Select **Hour** or **Day**.

3. Click **Save**.

Working with Transitions

A transition moves the record from one state to another in the workflow. A workflow must have at least two states before you can create a transition. For an overview of transitions in SuiteFlow, including transition properties, triggers, and conditions, see Workflow Transitions.

You can create and edit workflow transitions in the diagrammer or in the Workflow State window. Each transition has properties that specify the state the workflow transitions to, what triggers the transition, and any conditions needed for it to run. You can also define the transition to run when you click a button, when another state in the workflow finishes, or on a schedule.

The following table describes where you can get more information about working with transitions:

Task	For more information, see ...
Creating a transition in a workflow	Creating a Transition

Task	For more information, see ...
Editing an existing transaction	Editing a Transition
Deleting a transition and the effects on workflow state properties	Deleting a Transition
Scheduling a transition	Scheduling a Transition
Leaving the transition trigger blank (examples)	Blank Transition Trigger
Executing a transition with a saved search condition (example)	Executing a Transition with a Saved Search Condition
Transitioning on completion of a child workflow (example)	Specifying States for Child Workflow Transitions

Creating a Transition

You can create a workflow transition in the diagrammer or in the Workflow State window for the state that you want to move from. When you create a transition in the diagrammer, you create it first and then edit its properties. When you create a transition from the Workflow State window, you specify the properties when you create it.

Creating a Transition in the Diagrammer

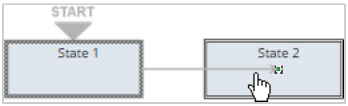
You can create a workflow transition in the Workflow Manager diagrammer. Create the transition and then edit it to specify the transition properties.

To create a transition in the diagrammer:

1. Open the existing workflow where you want to create the transition.

   See Viewing Existing Workflows and Workflow Searches.
2. In the diagrammer, hover over the bottom of the state that you want to leave. The cursor becomes a filled half-circle.

3. Drag the icon to the state you want to move to.



4. Release the mouse to create the transition.

5. To edit the transition, click the **Edit** icon on the **Transition** tab in the context panel. See Editing a Transition.

Creating a Transition in the Workflow State Window

You can create a transition in the Workflow State window and specify its properties.

To create a transition in the Workflow State window:

1. Open the existing workflow where you want to create the transition.

   See Viewing Existing Workflows and Workflow Searches.
2. Select the state in the diagrammer and click the **Edit** icon on the **State** tab in the context panel.
3. In the Workflow State window, click **New Transition** on the **Transitions** subtab.
4. The **Workflow** and **From** fields are already filled in with the workflow name and state, and you can't edit them.

   Enter the following basic properties:

Property	Description
To	Name of the state you want to move to.
Insert Before	Where to place this transition. Transitions process in the order they appear on the **Transitions** subtab for the state.
Transition On	Optional trigger for when to run this transition. For more information about triggers, see Workflow Triggers and Triggers Reference. For more information about when to leave this property blank, see Blank Transition Trigger.
Event Types	The activity that resulted in the record being created, viewed, or updated. The workflow instance initiates only if the event happens. For example, you can set the transition to run only if a record is copied. For more information, see Workflow Event Types and Event Types Reference.
Contexts	The NetSuite feature used to create, view, or update the record. The workflow instance initiates only if the context happens. For example, you can have the workflow instance start only when the record for the workflow is created by a web service. For more information, see the help topics Execution Contexts and Execution Context Types.

5. To specify conditions for execution of the transition, enter the following properties:

Property	Description
Condition	Criteria that must be met for the transition to run, which can include a condition or a formula. All criteria must be met for the transition to process. Use a condition to limit when a transition runs. For more information about using conditions, see Workflow Conditions.
Saved Search	Adds a saved search as a condition for running the transition. The transition runs if the current record in the workflow is returned by the saved search. The saved search record type must be the same as the base record type for the workflow for the search to appear in the dropdown list, For more information, see Executing an Action with a Saved Search Condition.
Workflow	Process the transition when the workflow in the **Workflow** dropdown list finishes. You can also select a specific state in the **State** dropdown list.

Property	Description
	The child workflow can be any workflow that uses the same base record type as the parent workflow. See Specifying States for Child Workflow Transitions.
State	Name of a state in the selected workflow. When this state finishes, the transition executes. See Specifying States for Child Workflow Transitions.
Button	Process the transition when a user clicks the button on the record. You must add the button using the Add Button action before you can select it from the dropdown list. See Using Buttons to Run Transitions.
Delay Unit	Schedule the transition to run after a delay that occurs after the record enters the state. Specify the time unit in the **Unit** field and the amount in the **Delay** field. You can use these options even if the trigger type isn't set to **Scheduled**. For more information, see Scheduling a Transition.

6. Click **Save**.

Editing a Transition

Edit an existing transition to change its properties or conditions. When you edit a transition, your changes affect only future instances of the workflow. The changes do not affect currently running workflow instances. For example, edit a transition while testing and troubleshooting a workflow, or after you create it in the diagrammer.

Edit a transition to complete the following tasks:

- Set the properties for the first time if you create the transition by drag and drop in the diagrammer
- Edit any of the other basic properties for the transition, including the trigger, event type, or context
- Edit any of the conditions for transition execution
- Change the target state for the transition

You can also reorder the transitions for a state. The transitions for a state run in the order that they appear on the **Transitions** subtab. Reordering Transitions.

To edit a transition:

1. Open the existing workflow that contains the transition that you want to edit.

   See Viewing Existing Workflows and Workflow Searches.
2. In the diagrammer, select the transition and click the **Edit** icon on the **Transition** tab in the context panel
3. Edit any of the following basic properties:

Property	Description
To	Name of the state you want to move to.
Insert Before	Where to place this transition. Transitions run in the order they appear on the **Transitions** subtab for the state.
Transition On	Optional type of trigger for when to run this transition.

Property	Description
	For more information about triggers, see Workflow Triggers and Triggers Reference. For more information about when to leave this property blank, see Blank Transition Trigger.
Event Types	The activity that resulted in the record being created, viewed, or updated. The workflow instance start only if the event happens. For example, you can set the transition to run only if a record is copied. For more information, see Workflow Event Types and Event Types Reference.
Contexts	The NetSuite feature used to create, view, or update the record. The workflow initiates only if the context occurs. For example, you can have the workflow instance initiate only when the record for the workflow is created by a web service. For more information, see the help topics Execution Contexts and Execution Context Types.

4. To edit any condition for execution of the transition, edit the following properties:

Property	Description
Condition	Criteria that must be met for the transition to run, which can include a condition or formula. All criteria have to be met for the transition to process. Use a condition to limit when a transition executes. For more information about using conditions, see Workflow Conditions.
Saved Search	Adds a saved search as a condition for running the transition. The transition runs if the current record in the workflow is returned in the saved search. To appear in the dropdown list, the saved search record type must be the same as the base record type for the workflow. For more information, see Executing an Action with a Saved Search Condition.
Workflow	Run the transition when the workflow in the **Workflow** dropdown list completes. You can also select a specific state in the **State** dropdown list. The child workflow can be any workflow with the same base record type as the parent workflow. See Specifying States for Child Workflow Transitions.
State	Name of a state in the selected workflow. When this state finishes, this transition runs. See Specifying States for Child Workflow Transitions.
Button	Run the transition when a user clicks the button on the record. You must add the button with the Add Button action before you can select it in this dropdown list. See Using Buttons to Run Transitions.
Delay Unit	Schedule transition to run after a delay that occurs after the record enters the state. Specify the time unit in the **Unit** field and the amount in the **Delay** field. You can use these options even if the trigger type isn't set to **Scheduled**. For more information, see Scheduling a Transition.

Deleting a Transition

Delete a workflow transition to keep it from processing on subsequent workflow runs. You can delete a transition using the diagrammer, context panel, or Workflow Transition window.

To delete a transition:

1. Open the existing workflow with the transition you want to delete.

See Viewing Existing Workflows or Workflow Searches.

2. In the diagrammer, select the transition and press Delete, or click the **Delete** icon on the **Transition** tab in the context panel.
3. (Optional) Double-click the transition in the diagrammer, then in the Workflow Transition window, select **Delete** from the Actions menu.

Reordering Transitions

The order of the workflow transitions on the **Transitions** subtab of the Workflow State window determines when each transition runs for each trigger type. If two transitions run on the same trigger type, the first transition listed runs before the second, if the condition requirements are met. Reorder the transitions on the **Transitions** subtab to specify the order they run.

> **Note:** For more information about the order of transition processing in a state, see Transition Triggers and SuiteFlow Trigger Execution Model.

There are two ways to reorder transitions. You can click and drag the icon to the left of **Edit** on the **Transitions** subtab of the Workflow State window and to move an action. Each workflow transition also has the **Insert Before** property you can use to change its order in a state.

To reorder transitions:

1. Open the existing workflow with the transitions you want to reorder.

   See Viewing Existing Workflows or Workflow Searches.
2. In the diagrammer, select the state with the transitions you want to reorder and click the **Edit** icon for that state in the context panel.
3. Click and drag the icon to the left of **Edit** on the **Transitions** subtab to move the action to a new location.
4. (Optional) To reorder an transition with the **Insert Before** property, click **Edit** next to the transition you want to move.

   In the Workflow Transition window, select a new **Insert Before** value, then click **Save**.
5. Click **Save**.

Scheduling a Transition

You can use the Scheduled trigger with a transition to create a scheduled transition. You can schedule a transition to run after a certain number of hours or days after the record enters the state. For more information about how scheduled transitions work, see the Scheduled Trigger.

You can add a delay to a transition for any trigger type. However, using the Scheduled trigger type gives you more control over when a transition runs. For example, if you set a delay on a transition and use the After Record Submit trigger, the delay starts only after that trigger runs. If you use the Scheduled trigger, the transition runs after the delay, starting when the record enters the state.

To schedule a transition:

1. Create a transition. See Creating a Transition.

> **Note:** Make sure you set the **Trigger On** property to **Scheduled**.

2. In the diagrammer, double-click the state with the transition that you want to schedule and click **Edit** to the left of the transition on the **Transitions** subtab.
3. In the **Workflow Transition** window for the transition, set the following properties:

Property	Description
Delay	Number of time units specified in the **Unit** property until the transition runs.
Unit	Unit of time for the **Delay**. Select **Hour** or **Day**.

4. Click **Save**.

Working with Conditions

You can use conditions on workflow initiation, workflow actions, and workflow transitions. Use these conditions to limit who, when, and which record instances start a workflow or execute actions and transitions. To create conditions you can use the:

- **Condition Builder:** see Defining a Condition with the Condition Builder.
- **Formula Builder:** see Defining a Condition with Formulas.
- **Saved Search:** see the help topic Saved Searches.

> **Note:** You can create composite conditions, meaning, one condition with field value comparisons, a formula, and a saved search. In these cases, all conditions must be true for the workflow instance to initiate or an action or transition to process. If the condition includes a saved search, the workflow action or transition only executes on the record instances the search returns.

For examples of using conditions see:

- Referencing Old Record Values in a Workflow and
- Defining Conditions for Customer Credit Hold Field

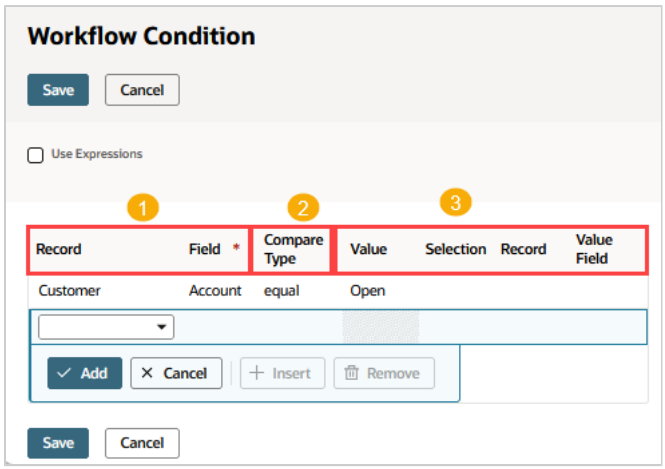
Defining a Condition with the Condition Builder

Use the Condition Builder to define a condition using record field value comparisons. You can access the Condition Builder from the **Condition** field in the workflow, action, or transition definition.

Condition Builder Components

Each condition you define with the Condition Builder consists of three main parts:

1. Target value for the comparison (left side of the condition). Use the left **Record** (optional) and **Field** columns to choose the field to compare.
2. The comparison operator.
3. Value used to compare against the target value (right side of the condition). You can't combine multiple values from different columns in one condition. If you want to use more than one value columns in a condition, combine the conditions using expressions. For more information, see Complex Conditions.

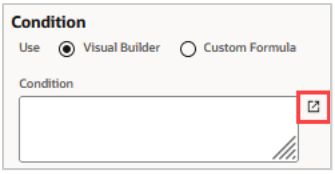


The following table describes each of the Condition Builder component:

Column Name	Description
Use Expressions	Select this option to create more complex conditions. See Complex Conditions.
Record	If you want to use a field from the base workflow record, leave this column blank Select a record type to source a field value in a join from the base record of the current workflow. You can also select the **Old Record** option. This will compare against the current, unsaved version of the base record instance for the workflow.
Field	Select a field from the base workflow record or joined record to use in the condition.
Compare Type	The comparison operator. The available operators depend on the field values.
Value	Use when you want to compare the **Field** value to a specific static value. Enter the value in this column, which will be evaluated using the **Compare Type** operator. This option is disabled if the selected **Field** or **Compare Type** doesn't support static comparisons.
Selection	Use this column to compare the selected **Field** value to more than one value by clicking the **Select Multiple** icon. This option is disabled if the selected **Field** or **Compare Type** doesn't support multi-select comparisons.
Record	Use this column to include fields from a joined record in the condition. Select the record type from the list of records you can join with the base record for the workflow. You can also select the **Old Record** option to compare against the current, unsaved version of the base record instance for the workflow.
Value Field	Name of the field from the workflow base record or the joined record you want to compare to the **Field** in the far-left column of the table. This option is disabled if the selected **Compare Type** doesn't support field comparisons.

To create a condition with the Condition Builder:

1. Open the workflow, action, or transition definition.
2. **Visual Builder** is selected by default. Click the **Open** icon to open the Condition Builder.



3. Enter your condition criteria. For more information, see Condition Builder Components.
4. Click **Add**.
5. Click **Save**.

Complex Conditions

Select **Use Expressions** in the Condition Builder to add columns that help you combine rows and create complex conditions:

Column Name	Description
NOT	Select to add the NOT operator before the expression. For example, `Not (Total Amount < 50000.00)`.
Parens	Add opening and closing parentheses to the expression.
And/Or	Choose the logical operator to connect each condition in the table.

Defining a Condition with Formulas

Use the Formula Builder to define conditions with formulas. Formulas are evaluated when a workflow triggers or an action or transition executes. Formula definitions can include internal field IDs, SQL functions, JavaScript, SuiteScript, and mathematical operators. You can manually enter formulas or build them with the Formula Builder.

Rules and Guidelines for Using Formulas

To avoid errors with formulas, follow these rules and guidelines.

- The type of functions you can use depend on the type of trigger set for workflow initiation, or action or transition execution.
- SQL functions execute on the server, while JavaScript and SuiteScript execute on the client. Therefore, use SQL functions with server triggers, and use JavaScript and SuiteScript functions with client triggers. You can't use client triggers for workflow initiation or transitions.
- If a formula references the internal ID of a custom field and the internal ID changes, you must update the formula with the new internal ID.
- Invalid formulas can break a record form, which means users won't be able to create or edit records. Be sure to test your formulas thoroughly before activating the workflow.

Formula Builder Parameters

The following table lists the Formula Builder's parameters and how to use them:

Parameter	Description
Function	Select an SQL or JavaScript function to include in the formula. When you select a valid function, it appears in the **Formula** box. If the function isn't valid, it won't appear. The list of functions isn't exhaustive. You can use functions not listed here in your formulas. The available functions change based on the workflow, action or transition trigger type.
Join	Select a record type to join with the base record type for the workflow. You can then use a field from the joined record. This option is available only in conditions where the workflow element uses a server-side trigger.
Value Field	Select the Field from the workflow base record or joined record you want to use in the formula. The Formula Builder enters its internal NetSuite ID in the **Formula**.
Formula	The formula automatically appears in the **Formula** field with your selected options. You can change the formula's logic by editing it here. You can also type a formula in this field yourself if the function you need isn't in the **Function** list. You can also change the logic created by the Formula Builder.

To create a formula with the Formula Builder:

1. Open the workflow, action, or transition definition.
2. Select **Custom Formula** in the **Condition** section.
3. Click the **Open** icon to open the Condition Builder.
4. Enter your condition criteria. For more information, see Formula Builder Parameters.
5. Replace the function's argument placeholders with the field ID you want to use in the formula.

   For example, to test if the length is greater than 10, replace:

   ```
   LENGTH(char){custrecord65}
   ```

   with:

   ```
   LENGTH({custrecord65}) > 10
   ```
6. Click **Set** to return to the workflow, action, or transition definition.

Working with Custom Fields

Custom fields include workflow fields and state fields. These fields are variables that you can use in workflows. Workflow fields apply to a single workflow instance while state fields apply to a single state in a workflow.

The following table describes where you can find more information about working with workflow and state fields:

Task	For more information
Creating and using workflow fields	Creating and Using Workflow Fields
Creating and using state fields	Creating and Using State Fields
Storing Workflow Action script return value in a workflow field	Storing a Return Value from a Custom Action Script in a Workflow Field

Creating and Using Workflow Fields

Important: Workflow Custom Fields and Workflow State Custom Fields can't be used successfully in client-side actions and conditions.

Workflow fields apply to a single workflow definition, storing a unique value for each record where an instance of the workflow runs. You can use workflow fields in conditions and actions like the Set Field Value action.

You can store the value of the field in the database for use by multiple workflow instances for the record type, or use it temporarily for one workflow instance.

To add a workflow field, create it on the workflow definition page. NetSuite fills in the field value when the workflow instance runs.

You can also use workflow fields to accomplish the following tasks:

- Track records created by a workflow using the Create Record action. Select the workflow field in the **Store Result In** field on the Create Record action. Then use the Subscribe To Record action to track changes to the created record.

  The **List/Record** type of the workflow field must match the **List/Record** type of the record you create with the Create Record action so it appears in the **Store Result In** dropdown list.
- Store a return value from a Workflow Action script using the **Store Result In** dropdown list of a Custom workflow action. See Storing a Return Value from a Custom Action Script in a Workflow Field.

To create a workflow field:

1. Open the workflow definition page for the workflow in which you want to create the workflow field.

   See Viewing Existing Workflows or Workflow Searches.
2. In the context panel, click the **Workflow** tab, click the **Fields** view, and then click **New Workflow Field**.

   Note: To change a workflow field after you create it, hover over the field name on the **Fields** view in the context panel and click the **Edit** icon.
3. In the Workflow Field window, enter the following properties:

Property	Description
Label	Name or description for the field. NetSuite displays this label in the context panel and the **Store Result In** dropdown list on Custom and Subscribe To Record actions.
ID	Optional script ID for the field. This value must be lowercase, can't include spaces, and can't be longer than 30 characters. Use script IDs if you plan to bundle the workflow and install it in another NetSuite account. Script IDs help avoid naming conflicts. NetSuite prefixes this value with `custworkflow` when you save the workflow definition.
Owner	Owner of the workflow field.
Description	Optional description of the field.
Type	Type of custom field. See the help topic Field Type Descriptions for Custom Fields.
List/Record	List or record that corresponds to the list or record type you chose for the **Type** property. You must enter a value for this property if you select a **List/Record** or **Multiple Select** value for the **Type** property. See the help topic Creating a Custom Field.

Property	Description
Store Value	Stores the field value in the NetSuite database when the workflow instance runs. Use this option if you need the value for future workflow instances. If you don't check the **Store Value** box, the field value is available **only** in the current workflow instance. When the field value isn't stored, the database treats the value as a string and it isn't available to other workflow instances.
Workflow	Instances of the workflow this field applies to. You can't edit this field.

4. Set the properties on the **Display**, **Validation & Defaulting**, and **Translation** subtabs. The **Sourcing & Filtering** subtab isn't available for workflow fields. To source a workflow field, you must use the Set Field Value Action action.

   Note: For additional information about workflow field properties, see the help topic Creating a Custom Field.

5. Click **Save**. The workflow field appears on the **Fields** subtab of the workflow definition page and the **Fields** view on the **Workflow** tab on the context panel.

   You can now use the field name in a condition or workflow action.

Creating and Using State Fields

Important: Workflow Custom Fields and Workflow State Custom Fields can't be used successfully in client-side actions and conditions.

State fields apply to a single state in a workflow. Similar to a workflow field, you use a state field to get and set data in a workflow. NetSuite fills in the field value when the record enters the state. You can use state fields in conditions and actions like the Set Field Value action.

The field stores a unique value for each record where an instance of the workflow runs. You can store the value of the field in the database for each time a record enters the state, or use it temporarily for a single visit to the state by the record in the workflow.

To create a state field, use the **Workflow State** window or the context panel.

To create a state field:

1. Open the workflow where you want to create the state field.

   See Viewing Existing Workflows or Workflow Searches.

2. In the diagrammer, select the state in which you want to create the state field, and click **New State Field** on the **Fields** view in the context panel.

   To edit an state field after you create it, hover over the field name on the **Fields** view in the context panel, and click the **Edit** icon.

3. In the Workflow Field window, enter the following properties:

Property	Description
Label	Name or description for the field. NetSuite displays this label in the context panel and in the **Store Result In** dropdown list on action definition pages.
ID	Optional script ID for the field. This value must be lowercase, can't include spaces, and can't be more than 30 characters. Use script IDs if you plan to bundle the workflow and install it in another NetSuite account. Script IDs help avoid naming conflicts.

Property	Description
	NetSuite prefixes this value with `custwfstate` when you save the workflow definition.
Owner	Owner of the state field.
Description	Optional description of the field.
Type	Type of field. See the help topic Field Type Descriptions for Custom Fields.
List/Record	List or record that corresponds to the list or record type selected for the **Type** property. You must enter a value for this property if you select a **List/Record** or **Multiple Select** value for the **Type** property. See the help topic Creating a Custom Field.
Store Value	Stores the field value in the NetSuite database when the record in the workflow enters the state. Use this option if you want the value for future visits to the state by the record in the workflow. If you don't store the field value, it's accessible only for the current visit to the workflow state.
Workflow	Instances of the workflow this field applies to. You can't edit this field.

4. Set the properties on the **Display**, **Validation & Defaulting**, **Sourcing & Filtering**, and **Translation** subtabs.

> **Note:** For additional information about custom field properties, see the help topic Creating a Custom Field.

5. Click **Save**. The state field appears on the **Fields** subtab of the **Workflow State** window and the **Fields** view on the **State** tab on the context panel.

   You can now use the field name in a condition or workflow action.

Workflow Administration

Use workflow administration in SuiteFlow to perform searches, initiate, process, and cancel workflow instances, and bundle workflows.

The following table lists the workflow administration tasks:

Task	Description
Search workflows	Search for workflow definitions or workflow instances. See Workflow Searches.
Initiate, process, or cancel workflows	Use the Mass Update feature in NetSuite to initiate workflows, process workflow instances, or cancel workflow instances. See Workflow Mass Updates.
Workflow governance	Check workflow governance to view the unit usage limits for workflows and workflow actions. See the help topic Script Type Usage Unit Limits.
Bundle workflows	Use SuiteBundler to bundle a workflow and install it into a different NetSuite account. See Bundling a Workflow.
Specify when workflow instances and history records are kept for a workflow	Choose if you keep workflow instances and history records Only When Testing, Never, or Always. See Disabling History for a Workflow.
Delete workflow instances and history records	Use the History Record Statistics feature to delete workflow instances and history records. See Deleting Workflow Instances and History Records.

Workflow Instance and History Record Management

Active workflows can create many workflow instances and history records. The following records are usually created when a workflow executes:

- An instance record is created every time a workflow starts a new execution on a record.
- A history record is created for every state that the workflow enters and exits for each record on which it executes.

There are several scenarios that can create many workflow instances and history records. The following scenarios are the most common:

- One-state workflows that run every time a record is displayed. This is the most common cause.
- Complex workflows that have a lot of states and execute on numerous records.
- You've used NetSuite for a long time and haven't deleted any workflow instances or history records.

Too many workflow instances and history records can negatively impact NetSuite performance. For example, you may begin to notice slower than usual processing, or unexpected behavior.

You can adjust your workflow settings

You can tweak your workflow settings o avoid the accumulation of too many workflow instances and history records. Use the following best practices:

- When you create new workflows, consider disabling workflow history or setting it to only save records during workflow testing. For more information, see Disabling History for a Workflow.
- Regularly delete workflow instances and history records that you don't need. For more information, see Deleting Workflow Instances and History Records.

Disabling History for a Workflow

You can use the Keep Instance and History dropdown list to specify if instance and history records are saved for workflows. Workflow history records show as execution and error log records. In the **Keep Instance and History** dropdown list, you can select to save workflow instances and history records **Always**, **Never**, or **Only When Testing**. You can access the Keep Instance and History dropdown list in the following places:

- Workflow Definition Page page
- Editing a Locked Workflow popup window

By default, the Only When Testing option is selected when you create new workflows. Keep in mind that history records created before 2018.1 are saved for existing workflows. You can delete records for these workflows using the Instances and History Records popup window. For details, see Deleting Workflow Instances and History Records.

When you select the Never or Only When Testing options, you can view workflow instance and history records on the record's Active Workflows Subtab and Workflow History Subtab subtabs while the workflow runs. After the workflow finishes or is canceled, the history records related to the workflow instance's execution are deleted from the database. When you select the Always option, history records related to the workflow instance's execution are saved in the database. Be aware that history records are never deleted for workflows that transition to a state with the Do Not Exit Workflow box enabled. For details, see Exit States.

One benefit of not saving history records for workflows that process many records is better system performance. Workflows that process many records produce many history records that can slow system performance. Additionally, you can also free a large amount of database space when you delete workflow history records.

To disable history for a workflow:

1. Go to Customization > Workflow > Workflows.
2. On the Workflows page, click **Edit** next to a workflow for which you want to disable history.
3. In the context panel, on the **Summary** subtab, click the **Edit** icon.
4. On the Workflow Definition window, in the **Keep Instance and History** dropdown list, click **Never**.
5. Click **Save**.

You can also disable history for locked workflows. See Editing a Locked Workflow.

Deleting Workflow Instances and History Records

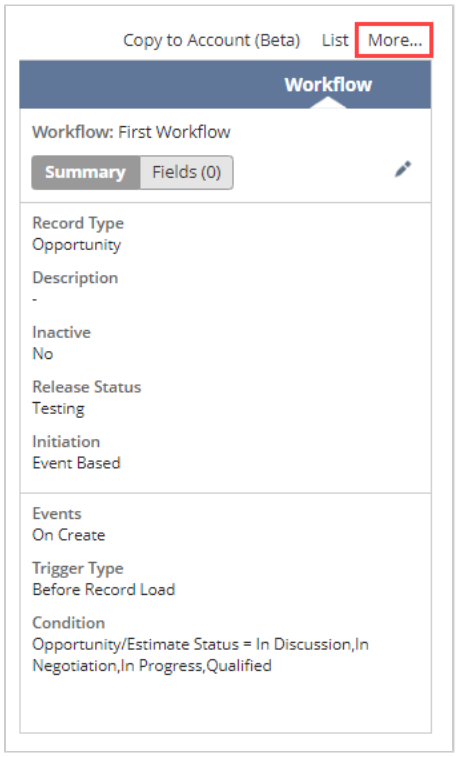
Warning: Deleted workflow instances and history records can't be recovered.

History records are created each time a workflow moves into a state, including the first state of the workflow. You can delete workflow instances and history records for finished workflow instances and view statistics on the Instances and History Records popup window.

Workflow instances and history records are deleted based on how long, in months, they've been stored. The default is 3 months, but you can set a different period.

> **Note:** The number of active and finished workflow instances in the Statistics section on the Instances and History Records popup window is an estimate and not an exact total. These numbers are rounded down to the closest number of instances and records.

The following screenshot shows the location of the More menu:



To delete workflow instances and history records:

1. Go to Customization > Workflow > Workflows.
2. Click **Edit** next to the workflow that you want to delete workflow instances and history records for.
3. From the **More** menu, select **Instances and History Records**.
4. In the **Instances and History Records** popup window, in the **Delete** section, enter the number of months for the age of the workflow instances and related history records that you want to delete. To delete all of the workflow instances and related history records, enter **0**.
5. Click **Delete**.

To see the deletion status, from the More menu, select Instances and History Records. Statuses include Scheduling, Waiting for execution, and the deletion progress.

> **Important:** Deleting a large number of history records can take days. Only one deletion runs at a time; if you start several deletions, they're queued up and begin one after the other.

A record of the deletion process is logged on the History subtab on the Workflow Definition page. When the deletion process is complete, an email is sent to the user who started the deletion process.

Workflow Searches

You can use NetSuite to search for workflow definitions and instances. You can either use either a basic or advanced search for definitions and instances. When you perform a basic search, you use an interface unique to SuiteFlow. When you use an advanced search, you use the standard NetSuite search interface to search for workflow definitions and instances.

Use a workflow search to find out which workflows are running or inactive, which record types they use, which employees are using certain workflows, or which workflows came from a bundle.

The type of search you use depends on the type of information you want to view:

Type of Search	Type of Search Results	More Information
Workflow definition	For basic searches, look for all workflow definitions that match your search criteria, such as workflow name, description, trigger type, and other properties. For advanced searches, you can search by any workflow definition property.	Workflow Definition Search
Workflow instance	For basic searches, look for all workflow instances that match your search criteria, such as workflow name, last state entered, date entered and exited workflow, and the date the instance entered a specific state. For advanced searches, you can also search for fields specific to the record for the workflow instance, buttons added with the Add Button action, custom fields, and workflow history fields.	Workflow Instance Search

After you run a workflow search, you can save the search and then add a shortcut to the search results on your dashboard. See Adding Workflow Search Results to the Dashboard.

Note: If you want to search for workflows by the date the workflow was modified, you should audit the System Notes instead of running a workflow search. For more information, see the help topic Searching System Notes.

Workflow Definition Search

Use a workflow definition search on the **Workflow Search** page to search all workflows in an account by the criteria defined on the workflow definition page. NetSuite searches all workflows with any release status, including inactive workflows.

You can access the Workflow Search page from **Search** on the Workflow list page.

You can use the following types of workflow definition search:

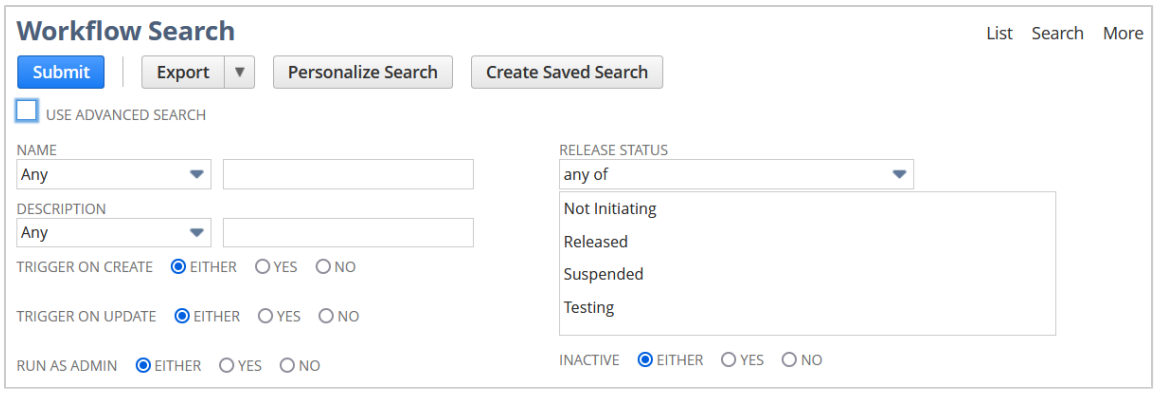
- Basic. The basic search is the default search option when you search from the Workflow list page. Use a basic search to perform a search based on a subset of the workflow definition properties. See Performing a Basic Workflow Definition Search.
- Advanced search. Use an advanced search to search on all workflow properties using the standard NetSuite search interface. You can enable advanced search on the **Workflow Search** page. See Performing an Advanced Workflow Definition Search.

Optionally, you can export search results as an Excel file or save the search as a saved search. You can also click **Personalize Search** to personalize the search form and only include the filters that a specific search needs. For more information, see the help topic Personalizing a Search Form.

The following screenshot shows the results of a workflow definition search:

Performing a Basic Workflow Definition Search

Use basic search to perform a search based on a subset of the workflow properties. The following screenshot shows the workflow properties that you can use as criteria in a basic search:



To perform a basic workflow definition search:

1. Go to Reports > New Search. On the Search page, click **Workflow**.
2. On the Workflow Search page, clear the **Use Advanced Search** box.
3. Enter the following search criteria. For the **Name**, **Description**, and **Release Status** properties, you must also select a comparison operator.

Criteria	Description
Name	The **Name** property on a workflow definition. Search by whole words only.
Description	The **Description** property on a workflow definitions. Search by whole words only.
Trigger On Create	Searches for workflows with the **On Create** event type selected. See Initiating a Workflow on an Event.
Trigger On Update	Searches for workflows with the **On Update** event type selected. See Initiating a Workflow on an Event.
Run As Admin	Searches for workflows with the **Execute As Admin** property enabled. See Execute as Admin for Workflow Instances.
Release Status	Searches for workflows by the **Release Status**. See Release Status for Workflow Instances.
Inactive	Searches for workflows with the **Inactive** property enabled. See Inactivating a Workflow.

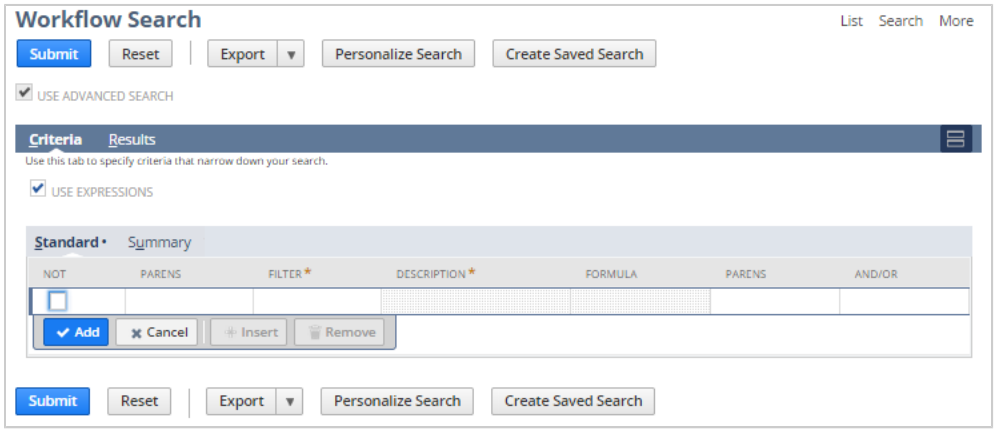
4. (Optional) To customize the results page, click **Personalize Search**. See the help topic Personalizing a Search Form.

5. (Optional) To create a saved search from the search criteria entered on the page, click **Create Saved Search**. NetSuite opens the search criteria on the **Saved Workflow Search** page. For more information about working with saved searches, see the help topic Defining a Saved Search.
6. Do one of the following:
   - To perform the search and display the results in NetSuite, click **Submit**.
   - To perform the search and then export the results and view them as a comma-separated file, click Export > Export Data Only.

Performing an Advanced Workflow Definition Search

Use advanced search to perform a search based on all workflow properties available on the workflow definition page. An advanced search uses the standard NetSuite search interface to search for workflows.

The following screenshot shows the advanced workflow search interface:



Note: For more general information about running searches in NetSuite, see the help topic Simple and Advanced Searches.

To perform an advanced workflow definition search:

1. Go to Reports > New Search. On the Search page, click **Workflow**.
2. On the **Workflow Instance Search** page, check the **Use Advanced Search** box.
3. Optionally, on the **Criteria** subtab, enable **Use Expressions** to use NOT, AND, OR, and parentheses in the search filters.
4. On the **Criteria** subtab, define the standard and summary search filters:

Subtab	Description
Standard	Select results based on the individual workflow property values. For more information, see the help topic Defining Standard Search Filters.
Summary	Select results based on calculated summary property values for a group of workflows. This filter is available only if you set a summary type for a field on the **Results** subtab. For more information, see the help topic Summary Search Filters.

5. On the **Results** subtab, set sort values and the search results fields to display, define summary types for results fields, and additional search result options.

   For more information, see the help topic Search Results Display Options.

6. Optionally, to customize the results page, click **Personalize Search**. See the help topic Personalizing a Search Form.
7. Optionally, to create a saved search from the search criteria entered on the page, click **Create Saved Search**.

   NetSuite opens the search criteria on the **Saved Workflow Search** page. For more information about working with saved searches, see the help topic Defining a Saved Search.
8. To perform the search and display the results in NetSuite, click **Submit**. You can then export the results or edit the workflow definition.

   -OR-

   To perform the search and then export the results and view them as a comma-separated file, click Export > Export Data Only.

Workflow Instance Search

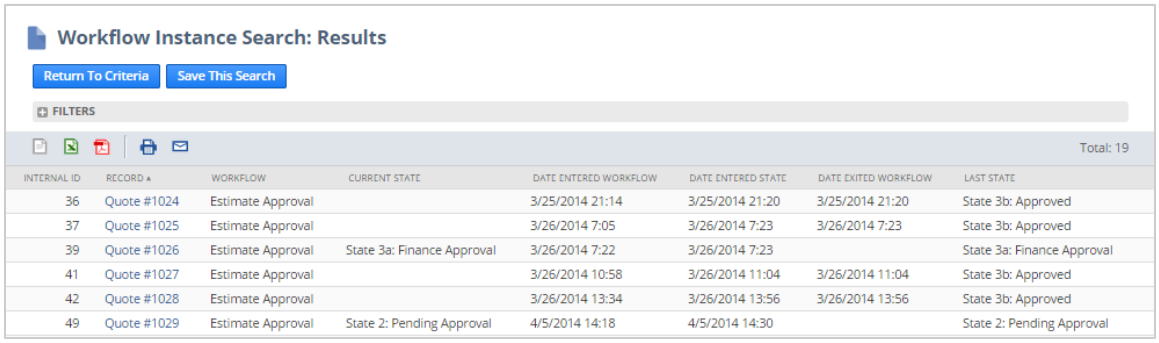
Use a workflow instance search to get a list of workflow instances that completed or are in progress for one or more workflow definitions. To get the list, search using the criteria for the workflow instances that you want to view. After you run the search, you can view the individual records on which each workflow instance runs.

You can use the following types of workflow instance search:

- Basic. The basic search is the default search option when you search for a workflow instance. Use a basic search to perform a search based on a subset of the workflow instance properties. See Performing a Basic Workflow Instance Search.
- Advanced. Use an advanced search to search on all workflow instance properties using the standard NetSuite search interface. You can enable advanced search on the **Workflow Instance Search** page. See Performing an Advanced Workflow Instance Search.

Optionally, you can export the search results as an Excel file or save the search as a saved search. You can also click **Personalize Search** to personalize the search form and only include the filters that a specific search needs. For more information, see the help topic Personalizing a Search Form.

The following screenshot shows the results of a workflow instance search:

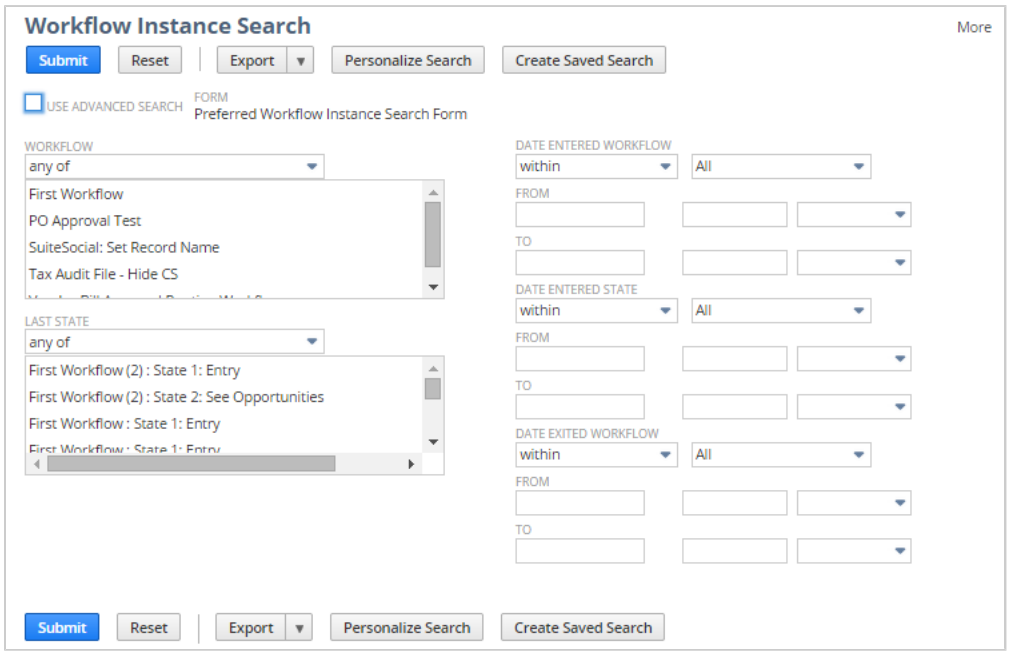


INTERNAL ID	RECORD	WORKFLOW	CURRENT STATE	DATE ENTERED WORKFLOW	DATE ENTERED STATE	DATE EXITED WORKFLOW	LAST STATE
36	Quote #1024	Estimate Approval		3/25/2014 21:14	3/25/2014 21:20	3/25/2014 21:20	State 3b: Approved
37	Quote #1025	Estimate Approval		3/26/2014 7:05	3/26/2014 7:23	3/26/2014 7:23	State 3b: Approved
39	Quote #1026	Estimate Approval	State 3a: Finance Approval	3/26/2014 7:22	3/26/2014 7:23		State 3a: Finance Approval
41	Quote #1027	Estimate Approval		3/26/2014 10:58	3/26/2014 11:04	3/26/2014 11:04	State 3b: Approved
42	Quote #1028	Estimate Approval		3/26/2014 13:34	3/26/2014 13:56	3/26/2014 13:56	State 3b: Approved
49	Quote #1029	Estimate Approval	State 2: Pending Approval	4/5/2014 14:18	4/5/2014 14:30		State 2: Pending Approval

Note: The **Current State** column displays states for currently running workflows. If a workflow isn't currently running, it doesn't display a current state.

Performing a Basic Workflow Instance Search

Use basic workflow instance search to perform a search based on a subset of the workflow instance properties. The following screenshot shows the workflow instance properties that you can use as criteria in a basic search:



To perform a basic workflow instance search:

1. Go to Reports > New Search.
2. On the **Search** page, click **Workflow Instance**.
3. On the **Workflow Instance Search** page, make sure **Use Advanced Search** is unchecked and enter the following search criteria.

> **Note:** For the Workflow or Last State criteria, select **any of** or **none of** and then select names to include or exclude from the search.
>
> For **Date Entered Workflow**, **Date Entered State**, and **Date Exited Workflow**, use the dropdown lists, Quick Filter, and calendar to select the date or date range. See Using Quick Filters For Date Range Selection.

Criteria	Description
Workflow	Include or exclude any workflow currently in your NetSuite account. This list shows all workflows, including inactive workflows.
Last State	The last state entered for all instances of workflows in the **Workflow** list. For completed workflow instances, this list shows the exit states. The list shows the workflow name and then the last state name: `<workflow name> : <state name>` Select **any of** or **none of** and then select the state names to include or exclude from the search.
Date Entered Workflow	The date that the workflow instance initiated. Use the dropdown lists, Quick Filter, and calendar to select the date or date range.
Date Entered State	The date that the record in the workflow entered the most recent state in the workflow instance. For completed workflows, this is the exit state. For currently running workflows, this is the last state entered by the record in the workflow instance.

Criteria	Description
Date Exited Workflow	For completed workflow instances, the date that the record left the exit state. Use the dropdown lists, Quick Filter, and calendar to select the date or date range.

4. Optionally, to customize the results page, click **Personalize Search**. See the help topic Personalizing a Search Form.
5. Optionally, to create a saved search from the search criteria entered on the page, click **Create Saved Search**.

   NetSuite opens the search criteria on the **Saved Workflow Search** page. For more information about working with saved searches, see the help topic Defining a Saved Search.
6. To perform the search and display the results in NetSuite, click **Submit**. You can click **Record** to view the individual record or export the search results.

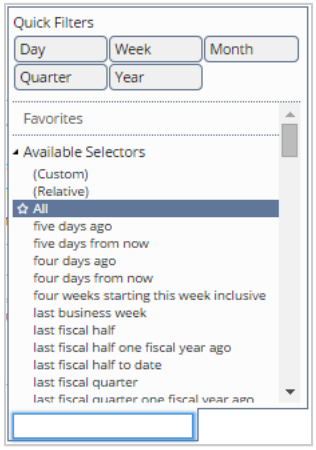
   -OR-

   To perform the search and then export the results and view them as a comma-separated file, click Export > Export Data Only.

Using Quick Filters For Date Range Selection

When you select a date range for search criteria in a workflow instance search, use **Quick Filters** to select a date range and auto-populate the **To** and **From** range fields on the search form or add fields to the date range.

The following screenshot shows **Quick Filters** for a date range:



Use the following features to select a date range:

- Click and highlight one or more of the **Day**, **Week**, **Month**, **Quarter**, and **Year** filters.

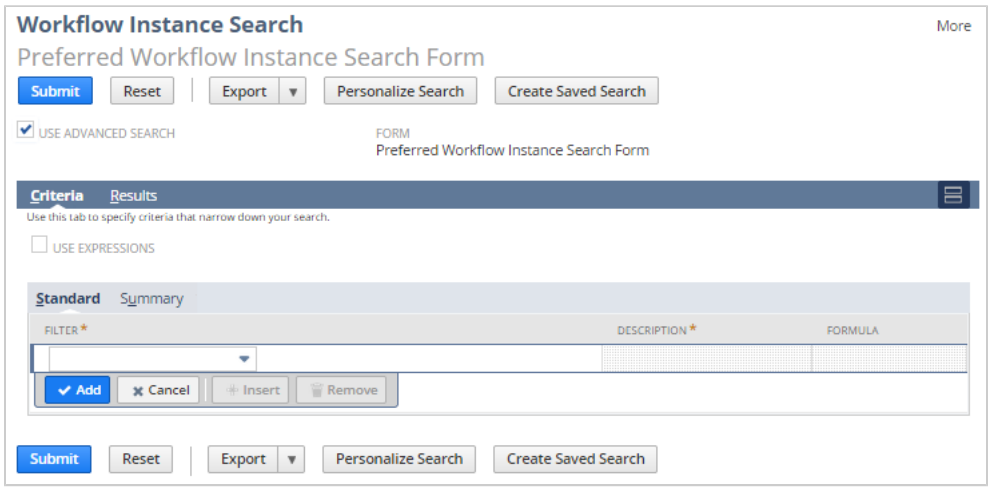
  NetSuite filters the Available Selectors list to include only the selectors for the filters you select. If you select multiple filters, the Available Filters list shows selectors that apply to all of the filters.
- Click the star icon next to any selector to add the selector to the Favorites list.
- Select **Custom** to add time fields to the search criteria.
- Select **Relative** to include items from a specific number of seconds, hours, days, quarters, or years in the past or the future as search criteria.

Performing an Advanced Workflow Instance Search

Use an advanced search to perform a search based on any workflow instance property, including fields specific to the record for the workflow instance, buttons added with the Add Button action, custom fields,

and workflow history fields. An advanced search uses the standard NetSuite search interface to search for workflows.

The following screenshot shows the advanced workflow instance search interface:



To perform an advanced workflow instance search:

1. Go to Reports > New Search.
2. On the **Search** page, click **Workflow Instance**.
3. On the **Workflow Instance Search** page, check the **Use Advanced Search** box.
4. Optionally, on the **Criteria** subtab, enable **Use Expressions** to use NOT, AND, OR, and parentheses in the search filters.
5. On the **Criteria** subtab, define the standard and summary search filters:

Subtab	Description
Standard	Select results based on the individual workflow instance values. For more information, see the help topic Defining Standard Search Filters.
Summary	Select results based on calculated summary property values for a group of workflow instances. This filter is available only if you set a summary type for a field on the **Results** subtab. For more information, see the help topic Summary Search Filters.

6. On the **Results** subtab, set sort values, and the search results fields to display, define summary types for results fields, and additional search result options.

   For more information, see the help topic Search Results Display Options.
7. Optionally, to customize the results page, click **Personalize Search**. See the help topic Personalizing a Search Form.
8. Optionally, to create a saved search from the search criteria entered on the page, click **Create Saved Search**.

   NetSuite opens the search criteria on the **Saved Workflow Search** page. For more information about working with saved searches, see the help topic Defining a Saved Search.
9. To perform the search and display the results in NetSuite, click **Submit**. Click **Record** to view the individual record or export the search results.

   -OR-

   To perform the search and then export the results and view them as a comma-separated file, click Export > Export Data Only.

Adding Workflow Search Results to the Dashboard

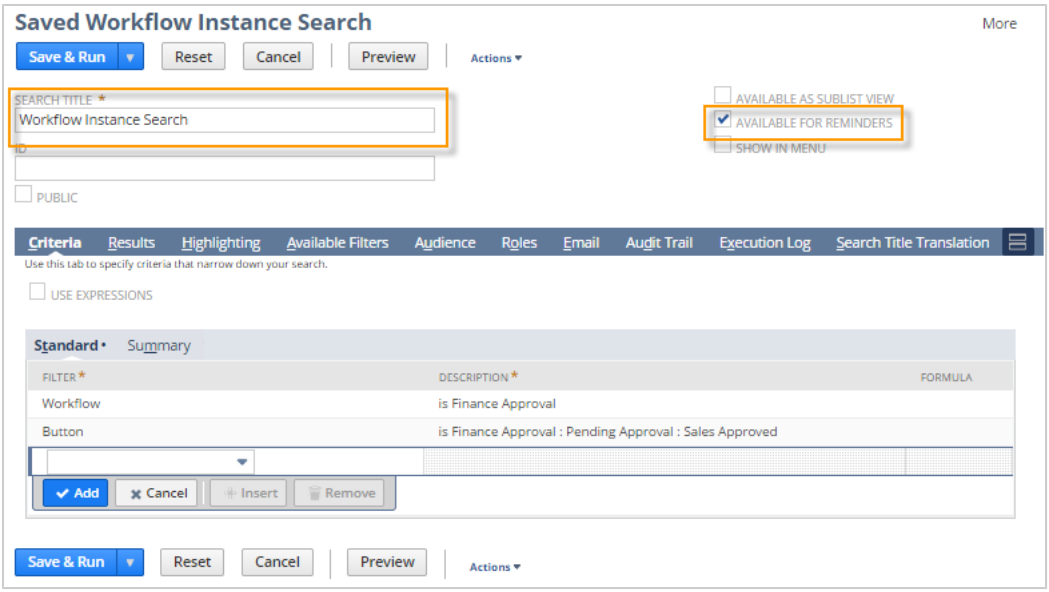
To access the results of workflow definition and workflow instance searches from the dashboard, add shortcut links to custom search portlets or the Reminders portlet. Add search results to the dashboard for common tasks, such as approvals of expense reports, budgets, and purchase requests.

For example, add the results of a workflow instance search that uses the Button filter to the Reminders portlet to show all records that a user must act on for a workflow to continue. For more information about creating a search with the Button filter, see Using the Button Filter in a Workflow Instance Search.

To add workflow search results to the Reminders portlet:

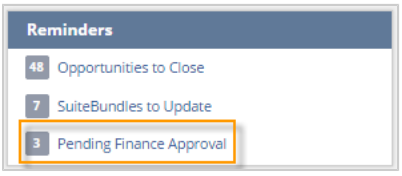
1. Run a workflow definition or workflow instance search. See Workflow Definition Search or Workflow Instance Search.
2. On the search results page, click **Save This Search**.

   NetSuite opens the search criteria in **Saved Workflow Search** page:



3. Enter a value for the **Search Title** and enable **Available For Reminders**.
4. Click **Save**.
5. On the dashboard, click **Set Up** on the **Reminders** portlet.
6. In the **Set Up Reminders** window, click **Add Custom Reminders**. Select the saved search you created in steps 3 and 4.
7. Click **Done** and then click **Save**.

   The link to the saved search appears on the **Reminders** portlet:



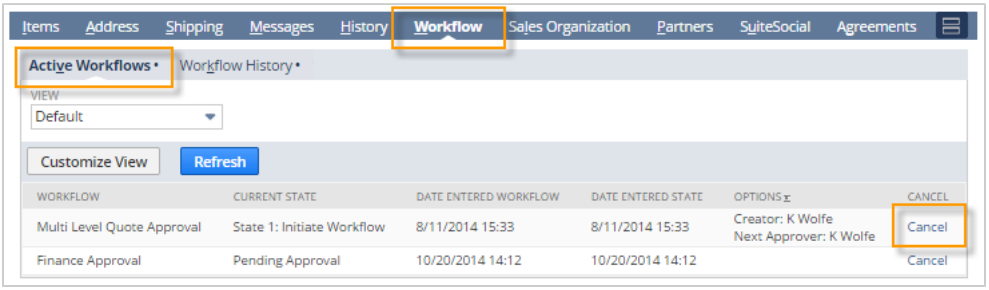
Canceling a Single Workflow Instance

You can cancel a single workflow instance from the record on which the workflow instance runs. Users with the Administrator role can cancel workflow instances. You can also cancel multiple workflow instances simultaneously. See Mass Canceling Workflow Instances.

Important: When you cancel a workflow instance for a single record, NetSuite reloads the record. Therefore, when a workflow is set to initiate **On Update** and uses the All or Before Record Load server triggers, the workflow instance re-initiates when you cancel it. To avoid this, use the Before Record Submit or After Record Submit server triggers on workflows set to initiate **On Update**. Mass canceling workflow instances doesn't have this limitation.

To cancel a single workflow instance:

1. Edit or view the record on which the workflow instance runs.
2. Click the **Workflow** subtab. The **Active Workflows** subtab appears by default.
3. Click **Cancel** next to the workflow instance that you want to cancel.



Note: Any other workflow instances still run; you must cancel each one individually.

4. Click **Yes** in the popup.
5. Optionally, click the **Workflow History** subtab to see the canceled instance. The **Notes** column displays the name of the user who canceled the instance.

Workflow Mass Updates

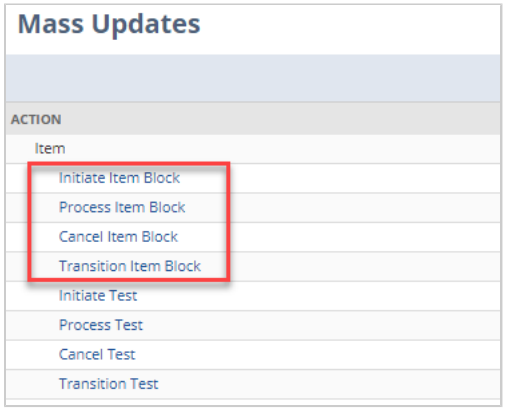
Use the NetSuite Mass Update feature to work with multiple workflow instances simultaneously. To use the Mass Updates feature with workflow instances, create a mass update that identifies the records on which you want to update and then save or perform the update immediately. The record type of the records that you mass update matches the base record type of the workflow you select.

Use the Mass Updates feature to do the following tasks with workflow instances:

- Initiate instances of the workflow. See Mass Initiating Workflow Instances.
- Execute transitions. See Mass Processing Records in a Workflow.
- Cancel workflow instances. See Mass Canceling Workflow Instances.
- Transition an active workflow on a record outside of the defined workflow execution path. See Mass Transitioning Workflow Instances.

For each record type, the Mass Updates page lists the workflows that you can initiate, process, cancel, or transition. For example, the following screenshot shows that there are two workflows based on the Item record:

- Item Block
- Test



Note: For general information about the Mass Update feature in NetSuite, see the help topic Mass Updates.

Mass Initiating Workflow Instances

You can initiate multiple instances of a specific workflow simultaneously on multiple records in NetSuite. You can mass-initiate workflow instances for standard NetSuite record types or custom record types. Use this feature to avoid viewing each record individually to initiate a workflow instance on the record.

For example, use this feature if your company recently imported a large number of employee records for an acquisition. After they're imported, you decide that you want to initiate a workflow named **New Employee Process** on each employee record. NetSuite can initiate a separate workflow instance for each employee record, based on the filters you specify for the mass update.

Note: You can also use a scheduled workflow to initiate multiple instances of a specific workflow simultaneously on multiple records. See Scheduling a Workflow.

To mass initiate a workflow on multiple records:

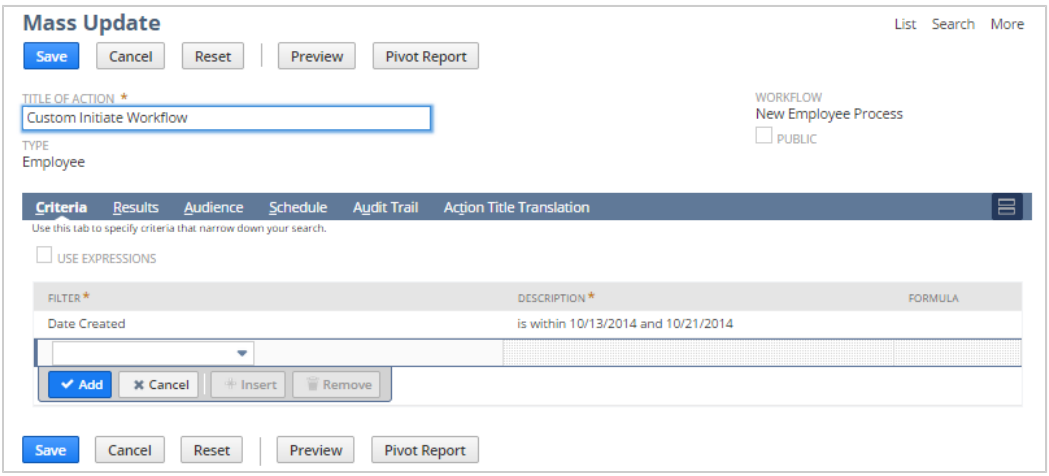
1. Go to Lists > Mass Update > Mass Updates.
2. On the Mass Updates page, expand **Workflow**.

   For each record type in NetSuite, the Mass Updates page lists the workflows that are available to initiate, process, cancel, or transition.
3. Click **Initiate <workflow name>** to initiate the appropriate workflow. The **Mass Update** page displays.
4. On the **Mass Updates** page, enter a **Title** and define the filters and other options on the following subtabs:

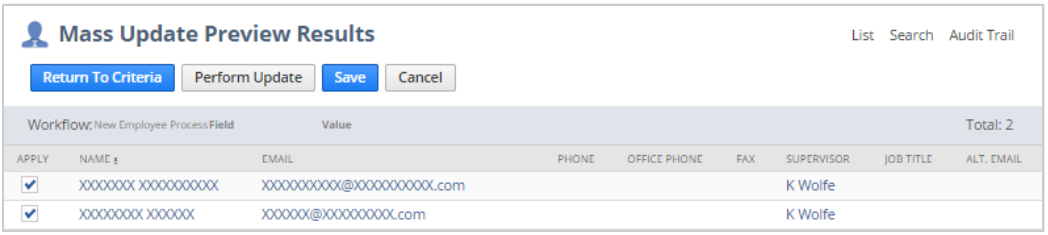
Subtab	Required / Optional	Description
Criteria	Required	Select a field or formula in the dropdown list and enter values in the popup that appears. See the help topic Advanced Search Criteria Filters.
Results	Optional	Set display options for mass update results. The results appear when you preview the records for the mass update.

Subtab	Required / Optional	Description
		See the help topic Search Results Display Options.
Audience	Optional	Choose the users who can run the mass update.
Schedule	Optional	Define a schedule on which to perform the mass update. See the help topic Scheduling a Mass Update.

The following screenshot shows the **Mass Updates** page for employee records created between two dates:



5. Click **Preview** to view the records on which the mass update will run:



6. Do one of the following:
   - To update immediately, in the **Apply** column, select the records you want to initiate the workflow on and click **Perform Update**. The status of the mass update is on the **Mass Update Status** page.
   - To save the update and run it later, click **Save**. NetSuite saves the mass update and displays the **Saved Mass Updates** page. You can return to this page to initiate the workflow instances by going to Lists > Mass Update > Saved Mass Updates. Click **Preview** next to the name of the update. On the **Mass Update Preview** page, click **Perform Update** to initiate the workflow instances.

Note: Optionally, from the **Mass Update** page, you can use the **Audit Trail** subtab to view the changes to the current mass update or use the **Action Title Translation** subtab to localize the title of the mass update.

Mass Processing Records in a Workflow

You can process multiple instances of a specific workflow simultaneously for the same record type in NetSuite. You can mass process instances of a workflow to transition them from the current state of the

workflow instance to the next state. You can use this feature to reevaluate transitions or run a transition that executes on a button. This feature only applies to records that are already in a running workflow instance.

For example, you want to transition all employee records in a workflow named **New Employee Process** from **State 2 Approve Training** to **State 3 Training Approved**. The workflow contains an Approve Training button, added with the Add Button action, that approves the records and transitions them to State 3. Instead of opening each employee record and approving the training, you can mimic the click of the Approve Training button to approve all or a subset of the records and transition them to State 3.

To mass process a workflow for multiple records:

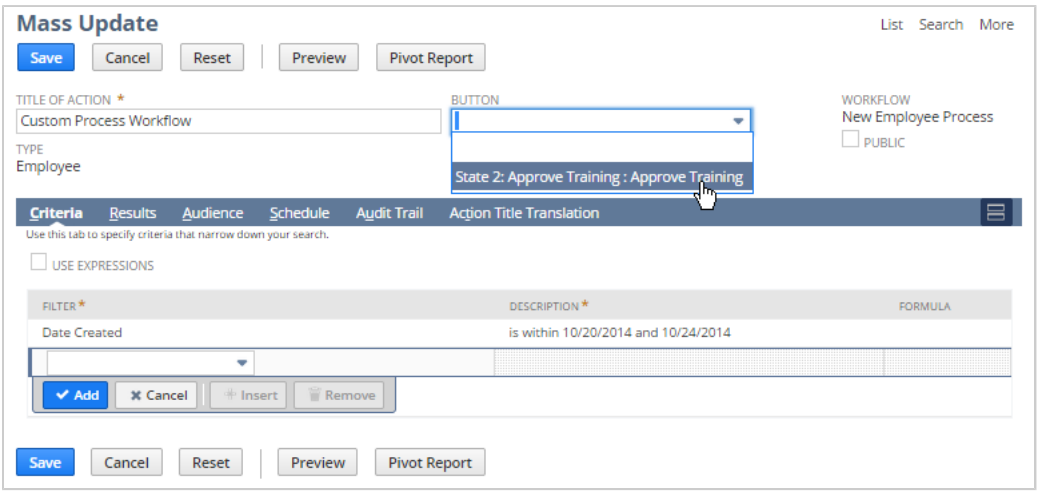
1. Go to Lists > Mass Update > Mass Updates.
2. On the Mass Updates page, expand **Workflow**.

   For each record type in NetSuite, the Mass Updates page lists the workflows that you can initiate, process, cancel, or transition for each record type.
3. Click **Process <workflow name>** to process the appropriate workflow. The **Mass Update** page displays.
4. On the **Mass Updates** page, enter a **Title**.
5. If you want to mimic the click of a button to transition the record to the next state, select the button name in the **Button** dropdown list.

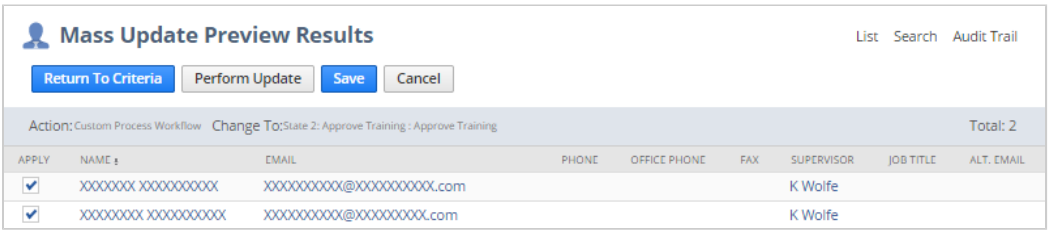
   > **Note:** This must be a button added with the Add Button action to the current state of the workflow instance.
6. Define the filters and other options on the following subtabs:

Subtab	Required / Optional	Description
Criteria	Required	Select a field or formula in the dropdown list and enter values in the popup that appears. See the help topic Advanced Search Criteria Filters.
Results	Optional	Set display options for mass update results. The results appear when you preview the records for the mass update. See the help topic Search Results Display Options.
Audience	Optional	Choose the users who can perform the mass update.
Schedule	Optional	Define a schedule on which to perform the update. See the help topic Scheduling a Mass Update.

The following screenshot shows the **Mass Updates** page for employee records created between two dates:



7. Click **Preview** to view the records on which the mass update will run:



8. Do one of the following:
   - To update immediately, in the **Apply** column, select the records you want to transition and click **Perform Update**. The status of the mass update is displayed on the **Mass Update Status** page.
   - To save the update and update later, click **Save**. NetSuite saves the mass update and displays the **Saved Mass Updates** page. You can return to this page to transition the records by going to Lists > Mass Update > Saved Mass Updates. Click **Preview** next to the name of the update. On the **Mass Update Preview** page, click **Perform Update** to transition the records.

> **Note:** Optionally, from the **Mass Update** page, you can use the **Audit Trail** subtab to view the changes to the current mass update or use the **Action Title Translation** subtab to localize the title of the mass update.

Mass Canceling Workflow Instances

You can cancel multiple instances of a specific workflow simultaneously for the same base record type in NetSuite. You can cancel workflow instances for standard NetSuite record types or custom record types. Use this feature to avoid viewing each record individually to cancel a workflow instance on the record. Users with the Administrator role can cancel workflow instances.

To cancel a workflow instance on multiple records simultaneously:

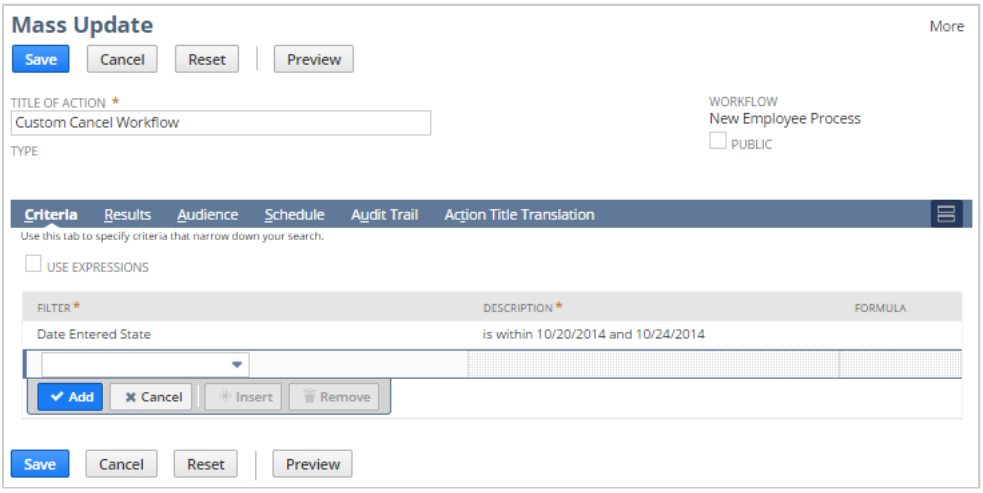
1. Go to Lists > Mass Update > Mass Updates.
2. On the Mass Updates page, expand **Workflow**.

   For each record type in NetSuite, the Mass Updates page lists the workflows that you can initiate, process, cancel, or transition for each record type.

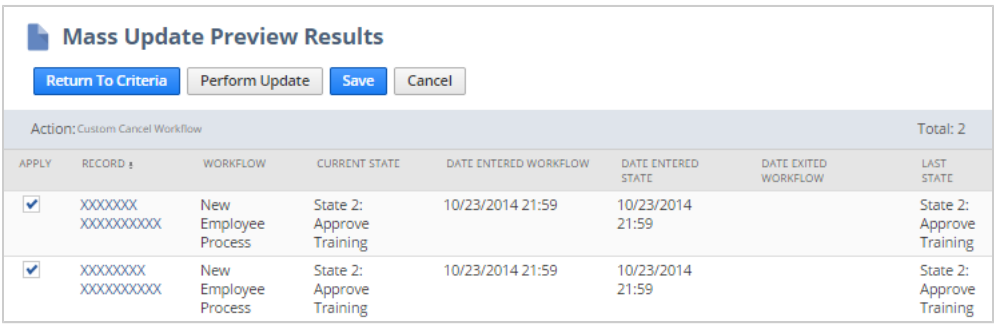
3. Click **Cancel <workflow name>** to process the appropriate workflow. The **Mass Update** page displays.
4. On the **Mass Updates** page, enter a **Title** and define the filters and other options on the following subtabs:

Subtab	Required / Optional	Description
Criteria	Required	Select a field or formula in the dropdown list and enter values in the popup that appears. These filters are specific to workflow history. See the help topic Advanced Search Criteria Filters.
Results	Optional	Set display options for mass update results. The results appear when you preview the records for the mass update. See the help topic Search Results Display Options.
Audience	Optional	Choose the users who can perform the mass update.
Schedule	Optional	Define a schedule on which to perform the update. See the help topic Scheduling a Mass Update.

The following screenshot shows the **Mass Updates** page for employee records created between two dates:



5. Click **Preview** to view the records with workflow instances to cancel:



6. Do one of the following:
   - To cancel the instances immediately, in the **Apply** column, select the records with workflow instances you want to cancel and click **Perform Update**. The status of the mass update is displayed on the **Mass Update Status** page.

- To save the update and perform it later, click **Save**. NetSuite saves the mass update and displays the **Saved Mass Updates** page. You can return to this page to transition the records by going to Lists > Mass Update > Saved Mass Updates. Click **Preview** next to the name of the update. On the **Mass Update Preview** page, click **Perform Update** to cancel the instances.

> **Note:** Optionally, from the **Mass Update** page, you can use the **Audit Trail** subtab to view the changes to the current mass update or use the **Action Title Translation** subtab to localize the title of the mass update.

Mass Transitioning Workflow Instances

You can transition an active workflow on a record outside of the defined workflow execution path. You can transition multiple instances of a specific workflow simultaneously for the same record type without requiring a predefined transition in the workflow definition. You should use the Mass Update feature to transition workflows in the following circumstances:

- The workflow ends up on the wrong state and you need a manual one-time fix.
- The workflow is out of sync with the record on which the workflow is running.
- The workflow gets stuck on a state in a workflow execution path.

> **Note:** You should only mass transition workflow instances as a solution to a workflow problem and not as a way to regularly execute workflows.

To transition an active workflow on a record outside of the defined workflow execution path, you must be logged in as an Administrator or have a role with the correct permissions. The role needs to have Mass Updates permissions, Workflow Admin permissions, and permissions to edit the record type you're using.

To transition workflow instances:

1. Go to Lists > Mass Update > Mass Updates.
2. On the Mass Updates page, expand **Workflow**.

   For each record type in NetSuite, the Mass Updates page lists the workflows that are available to initiate, process, cancel, or transition.
3. Click **Transition <workflow name>** to transition the appropriate workflow.
4. If you're not doing the update immediately, on the **Mass Update** page, enter a title for the action in the **Title of Action** field.
5. In the **Transition To** dropdown list, select the state that you want to transition the workflow to.
6. If necessary, set the filter and other options on the following subtabs:

Subtab	Required / Optional	Description
Criteria	Optional	Select a field or formula in the dropdown list and enter values in the popup that appears. These filters are specific to workflow history. See the help topic Advanced Search Criteria Filters.
Results	Optional	Set display options for mass update results. The results appear when you preview the records for the mass update. See the help topic Search Results Display Options.

Subtab	Required / Optional	Description
Audience	Optional	Choose the users who can perform the mass update.
Schedule	Optional	Define a schedule on which to perform the update. See the help topic Scheduling a Mass Update.

7. Do one of the following:
   - To perform the update immediately, in the **Apply** column, select the records you want to transition the workflow on and click **Perform Update**. The status of the mass update is displayed on the **Mass Update Status** page.
   - To save the update and run it later, click **Save**. NetSuite saves the mass update and displays the **Saved Mass Updates** page. You can return to this page to transition the workflow instances by going to Lists > Mass Update > Saved Mass Updates. Click **Preview** next to the name of the update. On the Mass Update Preview page, click **Perform Update** to transition the workflow instances.

Note: Optionally, from the **Mass Update** page, you can use the **Audit Trail** subtab to view the changes to the current mass update or use the **Action Title Translation** subtab to localize the title of the mass update.

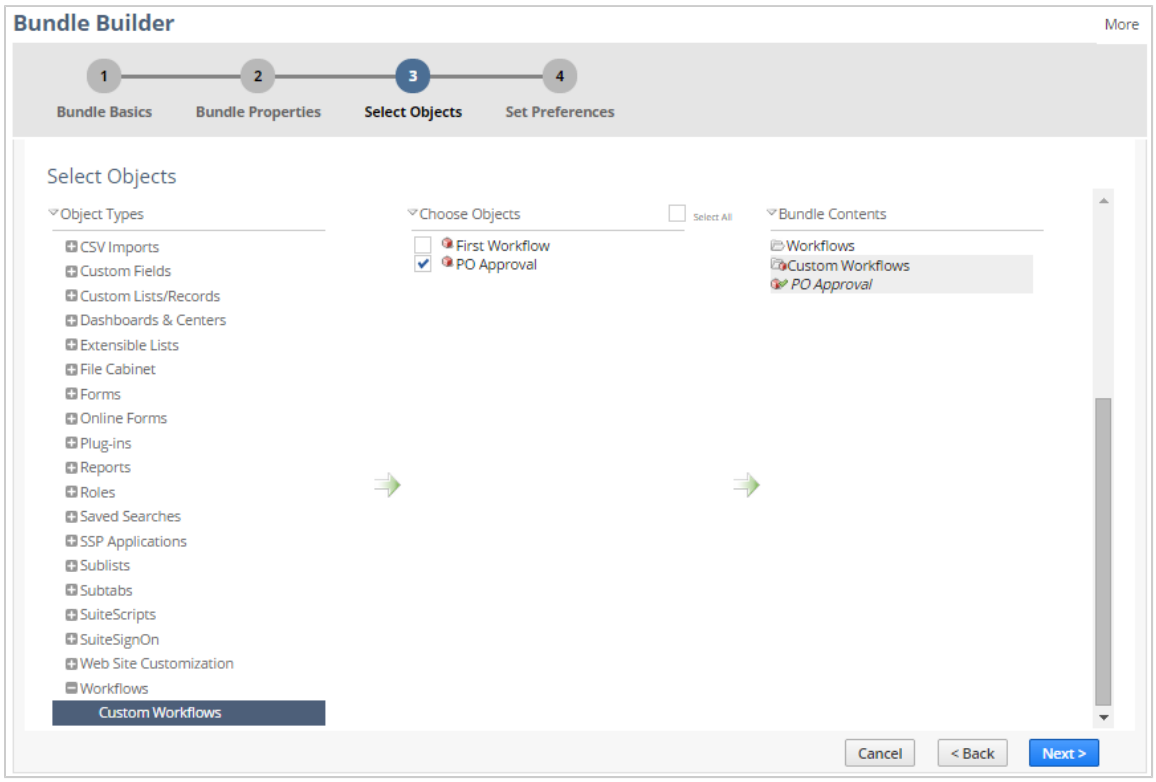
Bundling a Workflow

After you lay out and test a workflow, you can bundle the workflow to install it into other NetSuite accounts. Workflow objects can be locked in a bundle. However, if you lock a bundled workflow, the workflow definition, custom fields, states, transitions, and actions can't be edited in target accounts. Also, you can't add states or transitions to a locked workflow, but you can add workflow and state fields.

Use the Bundle Builder to bundle a workflow. You can bundle any workflow in an account, including any inactive workflows. If you include a workflow that references a custom role, that custom role is automatically included. For more information about using the Bundle Builder, see the help topics SuiteBundler Overview and Creating a Bundle with the Bundle Builder.

Important: Workflow instances and history logs aren't copied to target accounts when a bundle is installed or updated.

The following screenshot shows the Bundle Builder where you can select workflows to include in a bundle:



Rules and Guidelines for Bundling an Unlocked Workflow

Use the following rules and guidelines when working with bundled workflows:

- If you change states or transitions in an unlocked workflow in the source account, NetSuite updates states and transitions previously installed in the target account to match the ones in the source account. NetSuite also adds any new states or transitions in the source account to the target account. If a state or transition with the same name exists in the source and target accounts, NetSuite duplicates the state or transition in the target account.

  For example, after you install a bundle, you create a state named **state10** in both source and target account and then update the bundle. In the target account workflow, two states named **state10** will appear, one created directly in the target account and the other installed by the bundle update.
- If you change states, transitions, or any other property of the workflow objects in the target account, updating the bundle will revert the changes back to what the source dictates.
- If you delete states or transitions in a target account, they'll be re-added during a bundle update.
- If you delete any state or transition in the source, but use them in the target, you can't remove these states or transitions in the target account if the workflow is running in the target account and is currently referencing that state. Bundle creators should advise their customers to make these states or transitions inactive if they're no longer needed.

Editing a Locked Workflow

You can edit a workflow that's been locked after installing a bundle using the Basic Information dialog. This dialog lets you change the workflow release status and enable or disable logging for the workflow.

To edit a locked workflow:

1. Go to Customization > Workflow > Workflows.
2. On the Workflows page, click **Edit** next to a locked workflow. The Basic Information dialog appears.
3. To edit the release status of the dialog, select the appropriate status from the **Release Status** dropdown list.
4. To enable or disable logging for the workflow, check or clear the **Enable Logging** box. When logging is enabled for the locked workflow, you can view log information about the workflow on the record's System Information > Workflow History subtab.
5. To specify when to keep workflow history, in the **Keep Instance and History** dropdown list, click **Always**, **Never**, or **Only When Testing**. For details, see Disabling History for a Workflow.

Note: A padlock icon indicates that a workflow is locked on the Workflows page.

SuiteFlow Reference and Examples

Use this reference information and examples to further develop and customize a workflow. Use this information when you create or edit workflow definitions, states, actions, and transitions.

Note: For more information about creating and editing workflow definitions, see Working with Workflows.

Workflow Elements Reference

The following table lists the reference information for the elements of a workflow. Use the reference information to further develop and customize a workflow.

Workflow Element	Reference Topics
Actions	Workflow Actions Overview
Triggers	Triggers Reference
States	States Reference
Event types	Event Types Reference
Contexts	Execution Context Types
Workflow Templates	Workflow Templates Reference

Workflow Elements and Features Examples

The following table lists the examples for using the different elements of a workflow and SuiteFlow features. Use the examples to further develop and customize a workflow.

Workflow Element	Example Topics	Included Examples
Actions	Action Examples	▪ Using Buttons to Run Transitions ▪ Using Buttons for Navigation ▪ Executing an Action with a Saved Search Condition ▪ Using Conditional Fields with Actions ▪ Setting Field Values in Action Definitions ▪ Creating and Subscribing to a Record
Transitions	Transitions Examples	▪ Blank Transition Trigger ▪ Executing a Transition with a Saved Search Condition ▪ Specifying States for Child Workflow Transitions
Conditions	Condition Examples	▪ Referencing Old Record Values in a Workflow ▪ Defining Conditions for Customer Credit Hold Field
Context types	Context Type Examples	▪ CSV Import

Workflow Element	Example Topics	Included Examples
		▪ User Event Script ▪ Custom Mass Update
Event types	Examples of Event Types	▪ Print Event Type ▪ Mark Complete Event Type ▪ Drop Ship Event Type
Search	Workflow Search Examples	▪ Using the Button Filter in a Workflow Instance Search

Workflow Actions Overview

Actions are specific tasks that you're adding to a workflow's state. When a record enters a state, the workflow executes the actions as you've configured them.

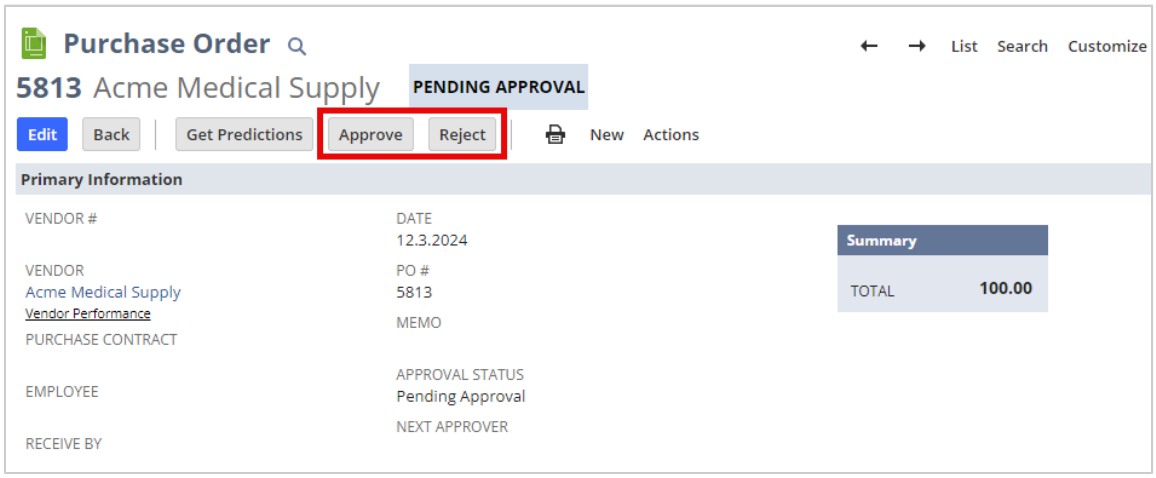
Action	Description	More Information
Add Button	Add a button to a record form.	Add Button Action.
Confirm	Display a popup message with OK and Cancel buttons.	Confirm Action.
Create Record	Create a new record.	Create Record Action.
Go To Page	Redirect users from a record in a workflow to a specified page in NetSuite.	Go To Page Action.
Go To Record	Redirect users to a specific record in NetSuite.	Go To Record Action.
Initiate Workflow	Initiate another workflow instance from the current workflow instance.	Initiate Workflow Action.
Lock Record	Lock the record for the workflow instance.	Lock Record Action.
Remove Button	Remove a button from a record form.	Remove Button Action.
Return User Error	Display an error message to users.	Return User Error Action.
Send Campaign Email	Send an email as part of a marketing initiative.	Send Campaign Email Action.
Send Email	Send an email.	Send Email Action.
Set Field Display Label	Change the UI label of a field in a workflow or sublist.	Set Field Display Label Action.
Set Field Display Type	Change the display type of a field.	Set Field Display Type Action.
Set Field Required	Set whether a record form field is required or not.	Set Field Required Action.
Set Field Value	Set the value of a record field.	Set Field Value Action.
Show Message	Display a message to the user.	Show Message Action.
Subscribe To Record	Track a workflow or state field that contains a reference to a record.	Subscribe To Record Action.
Transform Record	Transform a transaction record instance of one type into a transaction record instance of another type.	Transform Record Action.
Custom	Define an action with a Workflow action script.	Custom Action.

Add Button Action

The Add Button action is used to add a button to a record form. You can use the Add Button action to do any of the following:

- Transition a record to the next state in a workflow. For more information, see Using Buttons to Run Transitions.
- Go to another page or record. For more information, see Using Buttons for Navigation.
- Initiate mass processing for a specific base record type. For more information, see Mass Processing Records in a Workflow.

In this example, we use the Add Button action to add Approve and Reject buttons to the purchase order form. For more information about transitions, see Using Buttons to Run Transitions.



Note: Workflow definitions require a trigger configuration that initiates the workflow, executes an action within a workflow or transitions the workflow from one state to another.

- For more information about which workflow triggers the Add Button action supports, see Workflow Triggers Quick Reference.
- To understand when different workflow triggers run and which trigger you should use, see Workflow Triggers and the SuiteFlow Trigger Execution Model.

Add Button Action Parameters

The following table describes the Add Button action parameters:

Parameter	Description
Label	Text that represents the button on the record form. If the Multi-Language feature is enabled on your account, you can add label translations. For more information, see the help topic Configuring Multiple Languages
Save Record First	Clear by default.

Parameter	Description
	When you're checking this option, if a user edits a record tied to the workflow, the button label (formatted as Save & <_button label_>) gets added as an option to the Save button on the form. For example, if you're adding a button labeled Accept, the Save button will offer an option to Save & Accept.
Check Condition Before Execution	When you check this option, the workflow evaluates the conditions before executing the Add Button action. If the action has a saved search condition, the workflow will also evaluate if the record exists in the saved search results before executing the Add Button action. If you use this property in combination with the Save Record First box, when the user edits a record, the workflow evaluates the conditions using the updated and saved field values. If, with the updated field values, the conditions are evaluated as false by the workflow or if the workflow cannot evaluate the conditions, the workflow does not run the action. This property has no effect on an Add Button action that does not have a condition or saved search defined.

Note: For more information about adding actions to a workflow, including common action properties and conditions, see Action Conditions and Creating an Action.

Add Button Action Guidelines

Following are behaviors to consider when using Add Button actions:

- If you're wanting the buttons to appear every time a user accesses the record, use the Before Record Load action trigger, and don't use the Entry trigger.
- If a button should appear in multiple states, add the Add Button action to each state.
- If you use the Add Button action to add buttons to a newly created record (triggered On Create), the buttons display but are disabled on the new record form.
- If you create a workflow that includes an Add Button action, when a user interacts with the button and the record is saved, the System Notes will list the role of the user as Administrator, regardless of the role the user is logged in as.
- SuiteFlow prevents workflow instances and actions from processing simultaneously in the following scenarios:
  - A user double-clicks a workflow button.
  - A user clicks workflow button A, then clicks workflow button B before the record page automatically refreshes.
  - When a user double-clicks a workflow button, or clicks a sequence of workflow buttons. In this case, SuiteFlow alerts the user and asks if they would like to start processing the action when the previous action is still in progress.

Note: A workflow button is a button added by an Add Button action.

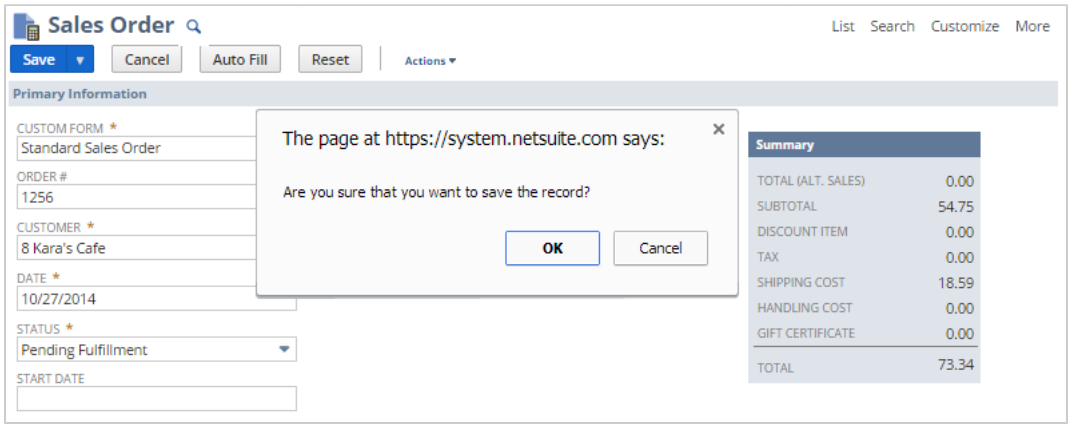
Confirm Action

Use the Confirm action to display a popup message with **OK** and **Cancel** buttons. A user can acknowledge the message and continue working or cancel the previous activity.

The Confirm action supports the Before Field Edit and Before User Submit client triggers. The behavior of the Confirm action buttons depends on which trigger you use:

Client Trigger	Button Behavior
Before Field Edit	▪ **OK.** The field value remains set. ▪ **Cancel.** The field value reverts to the previous value.
Before User Submit	▪ **OK.** NetSuite saves the record. ▪ **Cancel.** NetSuite does not save the record. The user can continue editing the record.

The following screenshot shows the Confirm action on a Before User Submit trigger:



Note: Workflow definitions require a trigger configuration that initiates the workflow, executes an action within a workflow or transitions the workflow from one state to another.

- For more information about which workflow triggers the Confirm action supports, see Workflow Triggers Quick Reference.
- To understand when different workflow triggers run and which trigger you should use, see Workflow Triggers and the SuiteFlow Trigger Execution Model.

Confirm Action Parameters

The following table describes the Confirm action parameters:

Parameter	Description
Text	Text to appear in the popup window when the Confirm action executes. The field accepts a maximum of 999 characters. If the **Multi-Language** feature is enabled on your account, you can add label translations. For more information, see the help topic Configuring Multiple Languages

Note: For more information about adding actions to a workflow, including common action properties and conditions, see Action Conditions and Creating an Action.

Create Line Action

Create Line Item in SuiteFlow

Use the Create Line action to add a new line to a transaction record's sublist. You can define how the sublist line is added to the transaction by configuring the Create Line Action Parameters. The Create Line action can be added to a workflow state as an individual action or as part of an action group. For more information about action groups, see Using Action Groups

Note: Workflow definitions require a trigger configuration that initiates the workflow, executes an action within a workflow or transitions the workflow from one state to another.

- For more information about which workflow triggers the Create Line action supports, see Workflow Triggers Quick Reference.
- To understand when different workflow triggers run and which trigger you should use, see Workflow Triggers and the SuiteFlow Trigger Execution Model.

Create Line Action Parameters

The following table describes the Create Line action parameters:

Parameter	Description
Sublist	The type of sublist where the action will create the line. **Items** and **Expenses (Expense Report)** on Transaction Records are the supported sublist types.
Position	The position in the sublist where you want the action to create a line. Options are **After Last Line** and **Before First Line**.
Field	Field values to populate in the sublist line created by the action. The available fields change dynamically depending on the type of sublist selected in the **Sublist** list. For each field, select the field name, set the appropriate properties in the other columns, and click **Add**.

Note: For more information about adding actions to a workflow, including common action properties and conditions, see Action Conditions and Creating an Action.

Create Record Action

Use the Create Record action to create a new record in NetSuite. The record can be a standard NetSuite record or a custom record. The record doesn't need to be the same record type as the base record type for the workflow. You can use this action to create a follow up record that is part of a business process. For example, a workflow with lead as the base record type can use the Create Record action to create call record as soon as the lead is saved.

Note: Workflow definitions require a trigger configuration that initiates the workflow, executes an action within a workflow or transitions the workflow from one state to another.

- For more information about which workflow triggers the Create Record action supports, see Workflow Triggers Quick Reference.
- To understand when different workflow triggers run and which trigger you should use, see Workflow Triggers and the SuiteFlow Trigger Execution Model.

Create Record Action Parameters

When you configure the Create Record action, you specify the record type and the field values of the new record instance.

The following table describes the Create Record action parameters:

Parameter	Description
Record Type	Type of record the action will create.
Store Result In	Workflow or state field where you can store a reference to the created record. To use this option you must first create the workflow or state field. See Workflow Custom Fields Use this field to subscribe to a created record with the Subscribe To Record action. See Creating and Subscribing to a Record.
Field	Field values to populate in the record created by the action. The available fields change dynamically depending on the type of record selected in the **Record Type** dropdown list. For each field, select the field name, set the appropriate properties in the other columns, and click **Add**. For more information, see Setting Field Values in Action Definitions

Note: For more information about adding actions to a workflow, including common action properties and conditions, see Action Conditions and Creating an Action.

Create Record Action Guidelines

Use the following guidelines when working with the Create Record action:

- When configuring the Create Record action, you must set values for all the required fields for the selected **Record Type** parameter. To verify the required fields, open the record type's create new record screen in the NetSuite UI and note which fields are necessary. If you do not set all required fields, the Create Record action fails.
- The Create Record action is not available on a Before Record Load trigger for a time entry record.

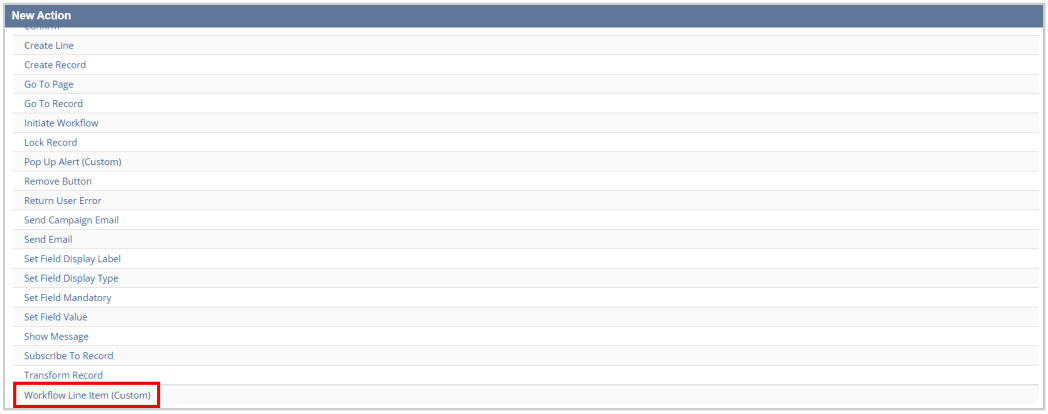
Custom Action

Use the Custom action to define an action with a SuiteScript Workflow Action script. The SuiteScript script will define the Custom action's behavior. Therefore, to use a Custom action in a workflow, first you will need to develop and deploy a SuiteScript Workflow Action script.

For information about SuiteFlow Workflow Action scripts and to see sample code, see the help topic SuiteScript 2.x Workflow Action Script Type.

To create a custom action

1. Create and deploy a Workflow Action script to define the action's functionality.
2. In the Workflow Manager, create a new action. The custom action only appears if the Workflow Action script was deployed for the base record type of the workflow. Workflow Action scripts display in the New Action's Type section with the **(Custom)** identifier:



Note: Workflow definitions require a trigger configuration that initiates the workflow, executes an action within a workflow or transitions the workflow from one state to another.

- For more information about which workflow triggers the Custom action supports, see Workflow Triggers Quick Reference.
- To understand when different workflow triggers run and which trigger you should use, see Workflow Triggers and the SuiteFlow Trigger Execution Model.

Custom Action Parameters

The following table describes the Custom action parameters:

Parameter	Description
Store Result In	A workflow or state field where you can store the Workflow Action script return value. To use this option you must first create the workflow or state field. See Workflow Custom Fields
Field	Parameter fields that are defined in the Workflow Action script deployment record. Here you can assign values to these fields so you can access them in the Workflow Action script using the SuiteScript N/runtime module. For more information, see the help topic N/runtime Module.

Note: For more information about adding actions to a workflow, including common action properties and conditions, see Action Conditions and Creating an Action.

Custom Action Guidelines

Use the following guidelines when working with Custom actions:

- For a Custom action to be available to all workflows, set the **Applies To** field on the deployment record of the Workflow Action script to **All Records**.
- Custom actions are skipped in workflows initiated by users not included in the custom script's audience. The skipped action scripts are listed in the Workflow Execution Log.
- Check out this example of storing a return value from a **Workflow Action** script in a workflow: Storing a Return Value from a Custom Action Script in a Workflow Field.

Go To Page Action

Use the Go To Page action to redirect users from a record in a workflow to a NetSuite page, including list views or reports.

Note: Workflow definitions require a trigger configuration that initiates the workflow, executes an action within a workflow or transitions the workflow from one state to another.

- For more information about which workflow triggers the Go To Page action supports, see Workflow Triggers Quick Reference.
- To understand when different workflow triggers run and which trigger you should use, see Workflow Triggers and the SuiteFlow Trigger Execution Model.

Go To Page Action Parameters

The following table describes the Go To Page action parameters:

Property	Description
Page	Where you can select the NetSuite page or report to redirect to when the action executes.

Note: For more information about adding actions to a workflow, including common action properties and conditions, see Action Conditions and Creating an Action.

Go To Page Action Guidelines

Use the following guidelines when working with the Go To Page action.

- The Go To Page action is not available on a Before Record Submit or After Record Submit trigger for a time entry record.

- If you want to redirect to a specific record instead of a list page or report, use the Go To Record action. See Go To Record Action.

Go To Record Action

Use the Go To Record action to redirect users to a record in NetSuite. The record type to redirect to does not have to be the same record type as the workflow's base record type.

Note: Workflow definitions require a trigger configuration that initiates the workflow, executes an action within a workflow or transitions the workflow from one state to another.

- For more information about which workflow triggers the Go To Record action supports, see Workflow Triggers Quick Reference.
- To understand when different workflow triggers run and which trigger you should use, see Workflow Triggers and the SuiteFlow Trigger Execution Model.

Go To Record Action Parameters

The following table describes the Go To Record action parameters and the values you must use to create a record or redirect to a specific record:

Parameters	Description
Record Type	Type of record to redirect to. The available fields in the table change dynamically depending on the **Record Type** selection.
Open in edit mode	When selected, the record the user is redirected to, opens in edit mode. This property only applies if you specify a value in the **Record ID** field.
Record (Join Field)	Use this field to use a join to get the ID of a record to redirect to. Select the record type to create the join from, and the **Value Field** to use from the selected record type.
Field	Field values to populate when creating the record on redirection. For each field, select the field name, set the appropriate field value in the applicable column, and click **Add**. For more information, see Setting Field Values in Action Definitions.

Note: For more information about adding actions to a workflow, including common action properties and conditions, see Action Conditions and Creating an Action.

Go To Record Action Guidelines

Use the following guidelines when working with the **Go To Record** action.

- You're unable to set field values on an existing record if the Go To Record action executes on a Before Record Load trigger. Instead, use a Custom action to update fields on an existing record, and then head to the record with the Go To Record action after it's updated. Instead, use a Custom action to update fields on an existing record, and then head to the record with the Go To Record action after it's updated.

- If you're not using the field definition area to set field values, you're able to add a URL parameter like `record.{field}={value}` on any SuiteScript-supported record, and the system will set up that field, the same as calling `setFieldValue` in a before load event handler.
- The Go To Record action is not available on a Before Record Submit or After Record Submit trigger for a time entry record.

Initiate Workflow Action

Use the Initiate Workflow action to initiate another workflow instance (child) from the current workflow instance (parent). The child workflow must be active and match the same base record type as the parent workflow. Plus, the child workflow initiated by the parent workflow runs on the same record instance as the parent. For example, if the parent workflow runs on a purchase order, the actions in the child workflow run on the same purchase order instance.

You can also use the completion of a child workflow as a transition trigger in the parent workflow. Select the child workflow on the transition's **Wait for Workflow** field.

For more information about the best practices to follow when using the Initiate Workflow action, see SuiteFlow Best Practices and Specifying States for Child Workflow Transitions.

Note: Workflow definitions require a trigger configuration that initiates the workflow, executes an action within a workflow or transitions the workflow from one state to another.

- For more information about which workflow triggers the Initiate Workflow action supports, see Workflow Triggers Quick Reference.
- To understand when different workflow triggers run and which trigger you should use, see Workflow Triggers and the SuiteFlow Trigger Execution Model.

Initiate Workflow Action Parameters

The following table describes the Initiate Workflow action parameters:

Parameters	Description
Workflow	Name of the workflow definition to initiate when the action executes.
Field	A list of workflow fields available in the child workflow. You can pass values from the parent workflow to the workflow fields belonging to the child. These values can be either static or set through a join.

Note: For more information about adding actions to a workflow, including common action properties and conditions, see Action Conditions and Creating an Action.

Initiate Workflow Action Guidelines

Use the following guidelines when working with the Initiate Workflow action.

- The Initiate Workflow action is not available on a Before Record Load trigger for a time entry record.
- For more information about the best practices to follow when using the Initiate Workflow action, see SuiteFlow Best Practices and Specifying States for Child Workflow Transitions.

Lock Record Action

Use the Lock Record action to remove the **Edit** button from a record belonging to the workflow's base record type. The record instance is locked while it is in the workflow state where the Lock Record action is defined. To lock a record instance when it is in different workflow states, add the action to each state.

Besides the common workflow action parameters, the Lock Record does not have any additional configuration options. For more information about adding actions to a workflow, including common action properties, see Creating an Action.

Note: Workflow definitions require a trigger configuration that initiates the workflow, executes an action within a workflow or transitions the workflow from one state to another.

- For more information about which workflow triggers the Lock Record action supports, see Workflow Triggers Quick Reference.
- To understand when different workflow triggers run and which trigger you should use, see Workflow Triggers and the SuiteFlow Trigger Execution Model.

Lock Record Action Guidelines

Use the following guidelines when working with the Lock Record action.

- If you attempt to load a locked record using SOAP web services or SuiteScript, NetSuite throws an error and does not load the record.
- The default trigger type for the Lock Record action is Before Record Load. Although the Entry and Exit triggers are available, the best practice is to lock the record before it loads into the browser.
- Locked records still appear with the **Edit** option in the record list screen, but cannot be edited after they are loaded into the browser.
- The Lock Record action is not available on a Before Record Load trigger for a time entry record.

Remove Button Action

Use the Remove Button action to remove buttons from a record form based on conditions, such as the user that views the record or the record's state.

Note: Workflow definitions require a trigger configuration that initiates the workflow, executes an action within a workflow or transitions the workflow from one state to another.

- For more information about which workflow triggers the Remove Button action supports, see Workflow Triggers Quick Reference.
- To understand when different workflow triggers run and which trigger you should use, see Workflow Triggers and the SuiteFlow Trigger Execution Model.

Remove Button Action Parameters

The following table describes the Remove Button action parameters:

Property	Description
Button ID	ID of the button to remove from the record form. This can be either a standard NetSuite or custom button id.

Note: For more information about adding actions to a workflow, including common action properties and conditions, see Action Conditions and Creating an Action.

Remove Button Action Guidelines

Use the following guidelines when working with the **Remove Button** action.

- You cannot use the **Remove Button** action to remove a button added with the Add Button action. To remove buttons added with the Add Button action, delete or inactivate the **Add Button** action.
- The default trigger type for the **Remove Button** action is **Before Record Load**. Although the Entry and Exit triggers are available, the best practice is to remove the button before the record loads into the browser. In the Workflow FAQ section, see Q: .

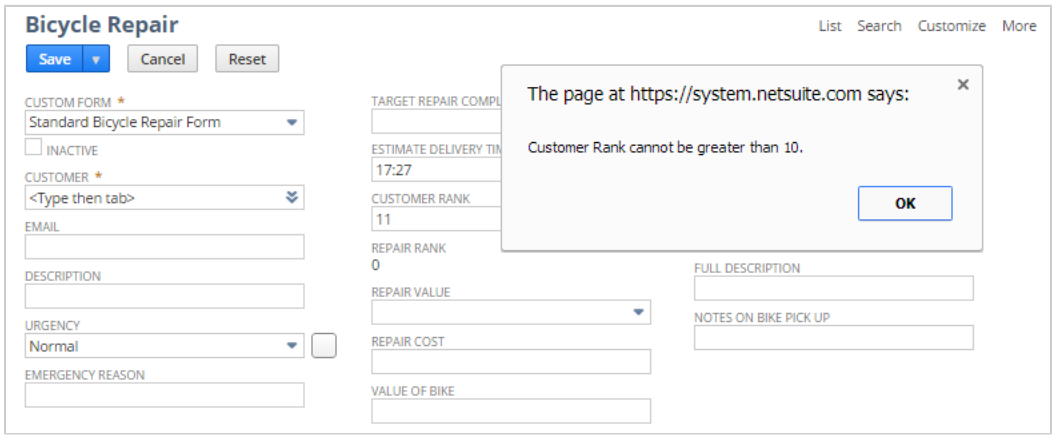
Return User Error Action

Use the **Return User Error** action to display an error message to users. Use this action with field or record validation to prevent the user from saving the record with invalid data. To create the **Return User Error** action, create validation conditions on the action definition.

How the error message displays depends on the type of trigger used in the action definition:

Trigger Type	Use Case	Error Message Format
Before Record Load	Validate record form field values before the record loads in the browser.	Displays as browser page with a **Go Back** button.
Any client trigger	Validate record form field values as user interacts with the record form fields.	Displays as popup window with an **OK** button.
Before Record Submit	Validate record form field values after the user clicks **Save**.	Displays as browser page with a **Go Back** button.

The following screenshot shows the Return User Error action on a client trigger:



The following screenshot shows the Return User Error action on a server trigger:

Note: Workflow definitions require a trigger configuration that initiates the workflow, executes an action within a workflow or transitions the workflow from one state to another.

- For more information about which workflow triggers the Return User Error action supports, see Workflow Triggers Quick Reference.
- To understand when different workflow triggers run and which trigger you should use, see Workflow Triggers and the SuiteFlow Trigger Execution Model.

Return User Error Action Parameters

The following table describes the Return User Error action parameters:

Parameter	Description
Text	The error message text. If the Multi-Language feature is enabled on your account, you can add text translations. For more information, see the help topic Configuring Multiple Languages

Note: For more information about adding actions to a workflow, including common action properties and conditions, see Action Conditions and Creating an Action.

Return User Error Action Guidelines

Use the following guidelines when working with the Return User Error action.

- It's smoother to use client-side triggers to catch errors on individual fields as they're entered, instead of server-side triggers on save. With server-side triggers, the user has to re-enter all data since the last successful save.
- The **Return User Error** action is not available on a Before Record Load trigger for a time entry record.
- When the user clicks **Go Back**, all field values entered since the record was last saved are removed.

Send Campaign Email Action

Use the Send Campaign Email action to send an email as part of a marketing initiative. You can use this action in a workflow for any record type, although it is commonly used with Customer, Lead, or Prospect record types. Use the Send Email Campaign action in a lead nurturing workflow to manage leads in a

marketing campaign. For a sample workflow that uses a Send Campaign Email action, see Lead Nurturing Workflow.

Use this action in conjunction with the Marketing Automation feature. For more information about the Marketing Automation feature, see the help topic Marketing Automation Overview.

To use the Send Campaign Email action, you specify the recipient of the email and the campaign event, and an optional workflow field to track the customer responses to the campaign event. Use the Subscribe To Record action to track responses to the campaign event. For more information about campaign events, see the help topic Managing Campaigns.

Note: Workflow definitions require a trigger configuration that initiates the workflow, executes an action within a workflow or transitions the workflow from one state to another.

- For more information about which workflow triggers the Send Campaign Email action supports, see Workflow Triggers Quick Reference.
- To understand when different workflow triggers run and which trigger you should use, see Workflow Triggers and the SuiteFlow Trigger Execution Model.

Send Campaign Email Action Parameters

The following table describes the Send Campaign Email action properties:

Property	Description
Record	Record that contains the entity from which the email address is used to send the campaign. The default selection is **Current Record**.
Field	An entity from the **Record** to which the email campaign is sent. For example, the current record's **Customer** field has an **Email** address that will receive the campaign.
Campaign Event	Title of the campaign event for the associated marketing campaign. For more information about campaign events, see the help topic Campaign Events.
Store Result In	Workflow field to store the campaign event response. Use this field in a Subscribe To Record action to track the response from the campaign recipient. See Creating and Using Workflow Fields and Subscribe To Record Action.

Note: For more information about adding actions to a workflow, including common action properties and conditions, see Action Conditions and Creating an Action.

Send Email Action

Use the Send Email action to send an email when the action executes. When you create a Send Email action, you can specify the sender, recipient, message content, and add attachments.

You can use the **Scheduled** trigger and specify in the **Schedule** section a time when the email will be sent. You can also schedule a Send Email action by scheduling a transition into a state that contains a Send Email action. See Scheduling an Action and Scheduling a Transition.

Note: Workflow definitions require a trigger configuration that initiates the workflow, executes an action within a workflow or transitions the workflow from one state to another.

- For more information about which workflow triggers the Send Email action supports, see Workflow Triggers Quick Reference.
- To understand when different workflow triggers run and which trigger you should use, see Workflow Triggers and the SuiteFlow Trigger Execution Model.

Send Email Action Parameters

The following table describes the Send Email action parameters:

Section	Parameter	Description
Sender	Specific Sender	Use the email address of a NetSuite user as the sender.
	From Field	Set the following options: - **Record (Join Field):** Select a record type that contains the field with the associated email address to use as the sender. - **Field:** Use the email address associated with this field. It can be a field that has an email address value or a field that references another record.
Recipient	Send To Current Record	Only available for some entity records. Send to the email address associated with the current record in the workflow.
	Specific Recipient	Use the email address of a NetSuite user as the recipient.
	Free Form Address	Email address or addresses to use. Separate multiple address with a comma, with no spaces in between.
	From Field	Set the following properties: - **Record (Join Field):** Select a record type that contains the field with the associated email address to use as the recipient. - **Field:** Use the email address associated with this field value.
	Cc	Email address or addresses to use as a **Cc**. Separate multiple address with a comma, with no spaces in between. Field is limited to 1000 characters. You can also reference internal NetSuite IDs. See Using Internal IDs in an Email.
	Bcc	Email address or addresses to use as a **Bcc**. Separate multiple address with a comma, with no spaces in between. Field is limited to 1000 characters. You can also reference internal NetSuite IDs. See Using Internal IDs in an Email.
Content	Use Template	Select an email template to use for the email content. You must have the Mail Merge feature enabled to use email templates.
	Custom	Select this option and manually enter the content in the **Subject** and **Body** fields. You can also use internal NetSuite IDs. See Using Internal IDs in an Email.

Section	Parameter	Description
	Include View Record Link	Include a link to the current workflow record in NetSuite at the end of the email. A link appears in the email with the text **View Record**. The recipient can click the link and log in to NetSuite to view the record.
Attachment	File	Select this option files from the File Cabinet. The maximum file size is 10 MB. Form more information, see Attaching Files to an Email.
	From Field	Select a **Record (Join Field)** record type and a **Field** from a record that has a reference to a document. The maximum file size is 10 MB. See Attaching Files to an Email.
	Include Transaction	Attach transaction details for workflows based on any transaction record type. If selected, the transaction details sent are those that belong to the current record in the workflow.
	Include Statement	Include a statement for workflows with Customer, Lead, or Prospect as their base record type. See Attaching Statements to an Email.
	Type	The rendering style of the statement you are including in the email. Only active if you are including a statement with your email message. Choose one of the options: ▪ **Inline - Above.** The statement information appears above the body text. ▪ **Inline - Below.** The statement information appears below the body text. ▪ **Default.** The statement is attached based on the customer's email preference from the **Preferences** subtab of the customer record. The default customer behavior is to attach the statement according to the email preference of the current user in the workflow. ▪ **HTML.** The statement appears as an HTML attachment. ▪ **PDF.** The statement appears as a PDF attachment.
	Statement Date	Select the date when the statement was generated. This option applies to the statement you are including and is unavailable if you are not including a statement with your email message.
	Start Date	Select a date for the earliest transactions you want to show on the statement. Leave this field blank if you want to show all transactions for this customer. This option applies to the statement you are including and is unavailable if you are not including a statement with your email message.
	Show Only Open Transactions	This option applies to the statement you are including and is unavailable if you are not including a statement with your email message.
	Consolidated Statement	Check the **Consolidated Statement** box to send a statement showing the overall balance for the customer-subcustomer hierarchy this customer is a part of. Clear this box to send a statement showing only the balance for this customer. Disable this option to show only a balance.
	Use Customer's Locale	Select this option to generate the statement in the customer's locale, instead of the default company language. For a list of supported languages, see System Supported Languages in Configuring Multiple Languages. Only available for workflows based on the Customer record type.

Note: The options available in the **Attachment** section differ depending on the type of record.

For more information about adding actions to a workflow, including common action properties and conditions, see Action Conditions and Creating an Action.

Using Internal IDs in an Email

You can use internal NetSuite IDs to dynamically generate values in the **Cc**, **Bcc**, and **Body** fields on a Send Email action.

For example, if the record in the workflow is a sales order, to generate the email as if it was sent by the sales rep for the customer, use the `{salesrep}` internal ID in the **Body** field:

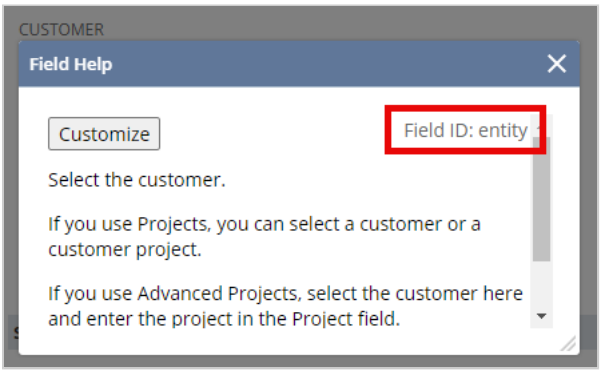
```
Thank you {entity}, for your order. We will notify you shortly regarding your shipping date.

Sincerely,
{salesrep}
```

You can also reference data from joined records using dot notation. For example, to add the email for the sales rep to the above email, use `{salesrep.email}`.

Note: Internal and Field IDs must enable the **Show Internal IDs** preference. For more information, see the help topic General Personal Preferences.

To use NetSuite internal Ids:

1. Go to the record that contains the field that you want to reference.
2. Hover above the field you want to reference.
3. Click on the field name to open the Field Help.
4. Copy the **Field ID** value.



5. Insert the field id value, in between curly braces, in the Send Email action field where you want to reference the record field. For example, `{entity}`.

Attaching Files to an Email

Define the file to attach in the Send Email action's **Attachment** section. You can attach files from the File Cabinet or from a joined field containing a file. Files from Image field cannot be attached. To attach multiple files, zip all the files into one folder and attach the ZIP file to the email.

To send a file as an attachment with the Send Email action:

1. Create a Send Email action.
2. Fill the required fields from the **Basic Information** section.
3. Fill the required Send Email action parameters. For more information, see Send Email Action Parameters
4. In the **Attachment** parameter, select to attach either a:
   - **File Cabinet file:** Select the **File** option and search for the file in the file cabinet.
   - **Join Field file**: Select the **From Field** option and choose the joined record type and the field from the joined record that contains the file to send.

Attaching Statements to an Email

Use the **Include Statement** option under the **Attachment** parameter to attach a statement to the email in a Send Email action. This option is only available in workflows with Customer, Lead, or Prospect as the base record type.

For example, you can configure a workflow to run weekly, with a search filter for customers overdue more than 90 days. By configuring the Include Statement option, the workflow will send the overdue statement to these customers.

To include a statement with the Send Email action:

1. Create a Send Email action.
2. Fill the required fields from the **Basic Information** section.
3. Fill the required Send Email action parameters. For more information, see Send Email Action Parameters
4. In the **Attachment** parameter, select the **Include Statement** option.
5. Fill the Include Statement options. For more information, see Send Campaign Email Action Parameters

Attaching Transactions to an Email

Use the **Include Transaction** option under the **Attachment** property to attach the details of a transaction record. This option is available in workflows with any Transaction as the base record type.

For example, you can create a workflow that automatically sends an email when an order is placed in the web store. By selecting the **Include Transaction** option, the order's transaction details are attached to the email.

To include a transaction with the Send Email action:

1. Create a Send Email action.
2. Fill the required fields from the **Basic Information** section.
3. Fill the required Send Email action parameters. For more information, see Send Email Action Parameters

4. In the **Attachment** parameter, select the **Include Transaction** option.
5. Fill the Include Transaction options. For more information, see Send Campaign Email Action Parameters.

Set Field Display Label Action

Use the Set Field Display Label action to change the UI label of a Sublist Action Group supported sublist. For more information regarding Sublist Action Group supported sublists, see Using Sublist Action Groups.

Note: Workflow definitions require a trigger configuration that initiates the workflow, executes an action within a workflow or transitions the workflow from one state to another.

- For more information about which workflow triggers the Set Field Display Label action supports, see Workflow Triggers Quick Reference.
- To understand when different workflow triggers run and which trigger you should use, see Workflow Triggers and the SuiteFlow Trigger Execution Model.

Set Field Display Label Action Parameters

The following table describes the Set Field Display Label action parameters:

Parameter	Description
Body	Select to run the action on one of the fields in the main body of the workflow's base record type.
Sublist	Select to run the action on one of the sublists in the workflow's base record type. If selected, choose the correct sublist from the list.
Field	Name of the field on which to change the label.
Label	String to use to replace the default UI label. If the Multi-Language feature is enabled on your account, you can add label translations. For more information, see the help topic Configuring Multiple Languages

Note: For more information about adding actions to a workflow, including common action properties and conditions, see Action Conditions and Creating an Action.

Set Field Display Type Action

Use the Set Field Display Type action to change a field's display type. For example, use this action in an approval workflow to either disable the approval field, set it to inline, or hide it so only the current approver can modify the field.

For more information about executing the action dynamically if the record meets certain conditions, see Using Conditional Fields with Actions.

Note: Workflow definitions require a trigger configuration that initiates the workflow, executes an action within a workflow or transitions the workflow from one state to another.

- For more information about which workflow triggers the Set Field Display Type action supports, see Workflow Triggers Quick Reference.
- To understand when different workflow triggers run and which trigger you should use, see Workflow Triggers and the SuiteFlow Trigger Execution Model.

Set Field Display Type Action Parameters

The following table describes the Set Field Display Type action parameters:

Parameter	Description
Body	Select to run the action on one of the fields in the main body of the workflow's base record type.
Sublist	Select to run the action on one of the sublists in the workflow's base record type. If selected, choose the correct sublist from the list.
Field	Name of the field on which to change the display type.
Display Type	Select one of the following display type options: - **Hidden.** Field cannot be seen on the record or transaction. - **Inline.** Used for informational purposes only. Cannot be edited. - **Disabled.** Field cannot be edited. - **Normal.** The field is editable. For more information about each of the display types, see the help topic Setting Display Options for Custom Fields.

Note: For more information about adding actions to a workflow, including common action properties and conditions, see Action Conditions and Creating an Action.

Set Field Required Action

Use the Set Field Required action to set whether a record form field is required or not. Required fields in NetSuite appear with an orange asterisk next to the field name. For more information about executing the action dynamically if the record meets certain conditions, see Using Conditional Fields with Actions.

Note: Workflow definitions require a trigger configuration that initiates the workflow, executes an action within a workflow or transitions the workflow from one state to another.

- For more information about which workflow triggers the Set Field Required action supports, see Workflow Triggers Quick Reference.
- To understand when different workflow triggers run and which trigger you should use, see Workflow Triggers and the SuiteFlow Trigger Execution Model.

Set Field Required Action Parameters

The following table describes the Set Field Required action parameter:

Parameter	Description
Body	Select to run the action on one of the fields in the main body of the workflow's base record type.
Sublist	Select to run the action on one of the sublists in the workflow's base record type. If selected, choose the correct sublist from the list.
Field	Name of the field on which to change the required configuration.
Mandatory	Makes the field required.

Note: For more information about adding actions to a workflow, including common action properties and conditions, see Action Conditions and Creating an Action.

Set Field Required Action Guidelines

If you use the Set Field Required action on a box field, NetSuite does not make the field required on the record form when you save the record.

Set Field Value Action

Use the Set Field Value action to set the value in a field in the workflow's base record type and sub types. Typically, this action is used to set the value of a field as a record enters a state.

Note: Workflow definitions require a trigger configuration that initiates the workflow, executes an action within a workflow or transitions the workflow from one state to another.

- For more information about which workflow triggers the Set Field Value action supports, see Workflow Triggers Quick Reference.
- To understand when different workflow triggers run and which trigger you should use, see Workflow Triggers and the SuiteFlow Trigger Execution Model.

Set Field Value Action Parameters

The following table describes the Set Field Value action properties:

Property	Description
Field	Name of the field of the base record type and sub types of the workflow on which to set the value.
Static Value	Set a static value in the field. Use one of the following options: - **Text:** Use for free form text fields. Enter the value in the **Text** field. - **Checked:** Use with checkbox fields. - **Selection:** Select a value or values from the **Selection** list. For multi-select fields, this option only applies for new records. See Set Field Value Action Guidelines.
Date	Select a date range when setting a value in a date field.
From Field	Sets, in the selected **Field**, the value of a different field from the current record, or from a different record using a join. Set the following options: - **Record (Join Field):** The record from which you will pick the field to get the value to set. - **Field:** The field from which to get the value to set.
Formula	Use the Formula Builder to create a formula used to derive the field value. For client triggers, use a JavaScript or SuiteScript formula. For server triggers, use an SQL formula. See Defining a Condition with Formulas.

Note: For more information about adding actions to a workflow, including common action properties and conditions, see Action Conditions and Creating an Action.

Set Field Value Action Guidelines

Use the following guidelines when working with the Set Field Value action.

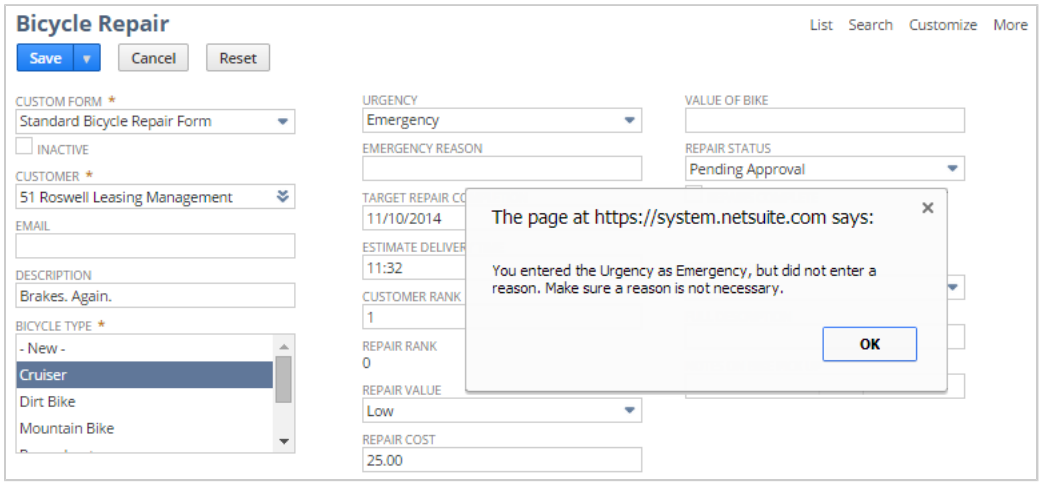
- You cannot use a Before Record Load trigger to set field values for existing records. Use a custom action to update fields on an existing record.
- The value you specify in a Set Field Value action on a Before Record Load trigger does not override a stored custom field or a field sourced from another record. To set this type of field, use a client trigger.
- Records must be in edit mode to enable you to set field values using the Set Field Value action.
- If you set the value of a multi-select field, the new values replace all the values in the target field.

- You cannot use the Set Field Value action to set the External ID of a record. External IDs are designed to be used as references in NetSuite. If setting the Internal ID is not sufficient for your business needs, you must create a custom field to set the External ID.
- To run the action dynamically if the record meets certain conditions, see Using Conditional Fields with Actions.

Show Message Action

Use the Show Message action to display a message to the user, such as when you want to validate values entered on a record form. The action displays the message in a popup window with an **OK** button. Unlike the Return User Error or Confirm actions, the Show Message action does not prevent subsequent user actions on the record form.

The following screenshot shows the behavior of the Show Message action:



Note: Workflow definitions require a trigger configuration that initiates the workflow, executes an action within a workflow or transitions the workflow from one state to another.

- For more information about which workflow triggers the Show Message action supports, see Workflow Triggers Quick Reference.
- To understand when different workflow triggers run and which trigger you should use, see Workflow Triggers and the SuiteFlow Trigger Execution Model.

Show Message Action Parameters

The following table describes the Show Message action parameters:

Parameter	Description
Text	Text to display in the browser popup when the action executes. If the Multi-Language feature is enabled on your account, you can add label translations. For more information, see the help topic Configuring Multiple Languages

Note: For more information about adding actions to a workflow, including common action properties and conditions, see Action Conditions and Creating an Action.

Subscribe To Record Action

You're welcome to use the Subscribe To Record action to track any changes to a record instance after the action runs. Since the record is being tracked, you're able to create conditions for actions or transitions in the current workflow that rely on field value changes in the referenced record.

The Subscribe To Record action works best when paired with the Create Record action. For example, you're creating a Phone Call record in a workflow and then subscribing to it. You're then able to create another action that runs only if the status of the Phone Call record changes.

Note: Workflow definitions require a trigger configuration that initiates the workflow, executes an action within a workflow or transitions the workflow from one state to another.

- For more information about which workflow triggers the Subscribe To Record action supports, see Workflow Triggers Quick Reference.
- To understand when different workflow triggers run and which trigger you should use, see Workflow Triggers and the SuiteFlow Trigger Execution Model.

Subscribe To Record Action Parameters

The following table describes the Subscribe To Record action parameters:

Parameter	Description
Field	Record field, from the record instance the workflow is processing, to track for changes.

Note: For more information about adding actions to a workflow, including common action properties and conditions, see Action Conditions and Creating an Action.

Subscribe To Record Action Guidelines

Use the following guidelines when working with the Subscribe To Record action.

- The Subscribe To Record action is not available on a Before Record Load trigger for a time entry record.
- For an example of:
  - Creating and subscribing to a Phone Call record, see Creating and Subscribing to a Record.
  - A complete workflow that uses the Create Record and Subscribe To Record actions, see the Lead Nurturing Workflow.
  - Creating workflow and state fields to use with the Create Record and Subscribe To Record actions, see Creating and Using Workflow Fields and Creating and Using State Fields.

Transform Record Action

Use the Transform Record action to transform the data on a transaction record into another transaction record type. When the action runs, you're getting a new instance of the target record type. You can create workflows that process transactions by turning them into the next record type in a transaction life cycle. For example, you can create a workflow to handle sales orders and generate invoices based on the right date range, amounts, or other criteria.

Note: Workflow definitions require a trigger configuration that initiates the workflow, executes an action within a workflow or transitions the workflow from one state to another.

- For more information about which workflow triggers the Transform Record action supports, see Workflow Triggers Quick Reference.
- To understand when different workflow triggers run and which trigger you should use, see Workflow Triggers and the SuiteFlow Trigger Execution Model.

Transform Record Action Parameters

The following table describes the Transform Record action parameters:

Parameter	Description
Record Type	Type of record to create by transforming the workflow's current record. Only supported record types for the workflow's current record appear.
Store Result In	Workflow field or state field in which to store a reference to the created record. Create the field before configuring the Transform Record action. Use this field to subscribe to a created record with the Subscribe To Record action. See Creating and Subscribing to a Record.
Redirect without saving	Select to permit the user to edit the transaction before saving.
Field	Field values to populate when creating the new record instance of the selected **Record Type**. For each field, select the field name, set the appropriate properties in the corresponding columns, and click **Add**. The list of properties in the **Field** column changes depending on the selected **Record Type**. For more information, see Setting Field Values in Action Definitions.

Note: For more information about adding actions to a workflow, including common action properties and conditions, see Action Conditions and Creating an Action.

Transform Record Action Guidelines

Use the following guidelines when working with the Transform Record action.

- The Transform Record action does not appear on the **New Action** window if the base record type of the workflow does not support record transformation.
- When you transform a record, the base record type for the workflow does not change.
- The Transform Record action is not available on a **Before Record Submit** or **After Record Submit** trigger for a time entry record.

- If the **Intercompany Cross-Subsidiary Fulfillment** feature is enabled, use SuiteScript to transform Sales Orders to Item Fulfillments. SuiteScript will let you pass the `inventoryLocation` transformation parameter. If SuiteScript is not an option and a workflow must be used, set Allow Cross Subsidiary Transaction to F and Inventory Location to blank for future transactions.
- The functionality of the Transform Record action is the same as the SuiteScript 2.x method –record.transform(options)

Triggers Reference

See the following topics for reference information about triggers in SuiteFlow:

- Server triggers. Server triggers occur when a record is read from or written to the NetSuite database or when a record enters or exits a state in a workflow. See Server Triggers Reference.
- Client triggers. Client triggers run when a user interacts with a record form in NetSuite. See Client Triggers Reference.

More Information About Server and Client Triggers

Use the following table to get more information about working with server and client triggers:

Task	For more information
Understanding the SuiteFlow trigger execution model	SuiteFlow Trigger Execution Model
View which triggers did or did not run	Workflow Execution Log
Using triggers for workflow initiation	Workflow Initiation
Using triggers for actions	Action Triggers
Using triggers for transitions	Transition Triggers

Workflow Triggers Quick Reference

The following table shows all actions and the triggers each action supports. The default trigger action is identified by the letter D.

	On Entry On Exit	Before Record Load	Before Record Submit	After Record Submit	Before User Edit	Before Field Edit	After Field Edit	After Field Sourcing	Before User Submit	Scheduled
Add Button Action	X	D	—	—	—	—	—	—	—	—
Confirm Action	—	—	—	—	—	X	—	—	D	—
Create Line Action	D	X	X	X	—	—	—	—	—	X
Create Record Action	D	X	X	X	—	—	—	—	—	X
Custom Action	D	X	X	X	—	—	—	—	—	X
Go To Page Action	X	—	—	D	—	—	—	—	—	—
Go To Record Action	X	—	—	D	—	—	—	—	—	—
Initiate Workflow Action	D	X	X	X	—	—	—	—	—	X

	On Entry On Exit	Before Record Load	Before Record Submit	After Record Submit	Before User Edit	Before Field Edit	After Field Edit	After Field Sourcing	Before User Submit	Scheduled
Lock Record Action	X	D	—	—	—	—	—	—	—	—
Remove Button Action	D	X	—	—	—	—	—	—	—	—
Return User Error Action	X	X	D	—	X	X	X	X	X	—
Send Campaign Email Action	D	—	—	X	—	—	—	—	—	X
Send Email Action	D	—	—	X	—	—	—	—	—	X
Set Field Display Label Action	X	D	—	—	X	X	X	X	—	—
Set Field Display Type Action	X	D	—	—	X	X	X	X	—	—
Set Field Required Action	X	D	—	—	X	X	X	X	—	—
Set Field Value Action	D	X	X	X	X	X	X	X	X	X
Show Message Action	—	—	—	—	D	X	X	X	X	—
Subscribe To Record Action	D	X	X	X	—	—	—	—	—	X
Transform Record Action	X	—	—	X	—	—	—	—	—	X

D indicates the default trigger action.

X indicates that the trigger action is supported.

The following table shows actions in groups and the triggers each action group supports. The default trigger action is identified by the letter D.

	On Entry On Exit	Before Record Load	Before Record Submit	After Record Submit	Scheduled
Add Button Action	X	D	—	—	—
Create Line Action	D	X	X	X	X
Create Record Action	D	X	X	X	X
Go To Page Action	X	—	—	D	—
Go To Record Action	X	—	—	D	—
Initiate Workflow Action	D	X	X	X	X
Lock Record Action	X	D	—	—	—
Remove Button Action	D	X	—	—	—
Return User Error Action	X	X	D	—	—

	On Entry On Exit	Before Record Load	Before Record Submit	After Record Submit	Scheduled
Send Campaign Email Action	D	—	—	X	X
Send Email Action	D	—	—	X	X
Set Field Display Label Action	X	D	—	—	—
Set Field Display Type Action	X	D	—	—	—
Set Field Required Action	X	D	—	—	—
Set Field Value Action	D	X	X	X	X
Subscribe To Record Action	D	X	X	X	X
Transform Record Action	X	—	—	X	X

D indicates the default trigger action.

X indicates that the trigger action is supported.

The following table shows actions in the sublist action group and the triggers each sublist action group supports. The default trigger action is identified by the letter D.

	On Entry On Exit	Before Record Load	Before Record Submit	After Record Submit	Scheduled
Create Record Action	D	X	X	X	X
Return User Error Action	X	X	D	—	—
Send Email Action	D	—	—	X	X
Set Field Value Action	D	X	X	X	X

D indicates the default trigger action.

X indicates that the trigger action is supported.

Server Triggers Reference

The following table describes the server triggers and their functionality. See Workflow Triggers and Server Triggers for general information about server triggers.

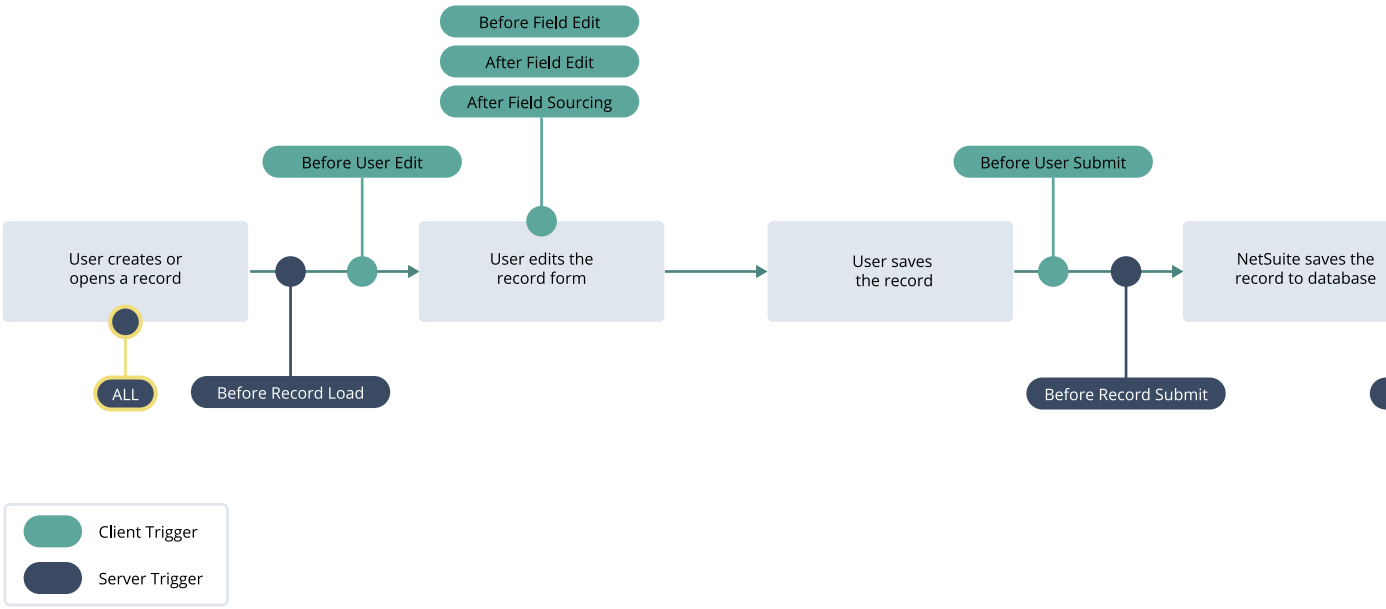
Trigger Type	Applies To	Description
All	▪ Workflow initiation	Initiates a workflow instance for any triggering event for a workflow. See All Trigger.

Trigger Type	Applies To	Description
Entry	▪ Actions ▪ Transitions	Executes the first time a record enters a state in a workflow. See Entry Trigger.
Before Record Load	▪ Workflow initiation ▪ Actions ▪ Transitions	Executes before a record loads into the browser. See Before Record Load Trigger.
Before Record Submit	▪ Workflow initiation ▪ Actions ▪ Transitions	Executes after a user clicks **Save** on a record, but before NetSuite saves the data to the database. See Before User Submit Trigger.
After Record Submit	▪ Workflow initiation ▪ Actions ▪ Transitions	Executes after NetSuite saves the record data to the database. See After Record Submit Trigger.
Exit	▪ Actions	Executes the first time a record exits a state in a workflow. See Exit Trigger.
Scheduled	▪ Workflow initiation ▪ Actions ▪ Transitions	Directs NetSuite to initiate a workflow or run an action or transition on a schedule. See Scheduled Trigger.

All Trigger

The All trigger type is a server trigger that starts an instance of a workflow for any triggering event that occurs for a record. For example, when a user views a record, a workflow instance initiates because a Before Record Load event executes on the viewing of a record.

The following diagram shows typical record events and when the All trigger executes:



Guidelines for the All Server Trigger

Important: Use the following guidelines when using the All server trigger.

- Use the All trigger when the functionality of the workflow is not dependent on when a workflow may initiate and enter the entry state.
- In general, you're better off choosing a more specific trigger type for workflow initiation. Think about when a workflow should start and enter the entry state. For example, if a workflow needs to start only after a record is saved to the database, go with the After Record Submit trigger instead.
- When you cancel a workflow instance for a single record, NetSuite reloads the record in the NetSuite UI. for workflows that start **On Update** and use the **All** or **Before Record Load** server triggers, the workflow instance kicks off again when you're canceling it. To avoid this result, use the **Before Record Submit** or **After Record Submit** server triggers on workflows set to initiate **On Update**.

Entry Trigger

The Entry trigger acts as a server trigger and runs the first time a record enters a state in a workflow. You're welcome to use the Entry trigger if you're wanting an action or transition to run only when a record enters a state for the first time. The Entry trigger works for all actions except Confirm and Show Message, and covers all transitions.

The actions and transitions running on the Entry trigger hinge on the server trigger that brought the record into the state. If the record enters the state on a Before Record Load trigger, only actions and transitions that can run on this trigger will go. You can control the trigger that brings a record into a state by using the right trigger on the transition into that state.

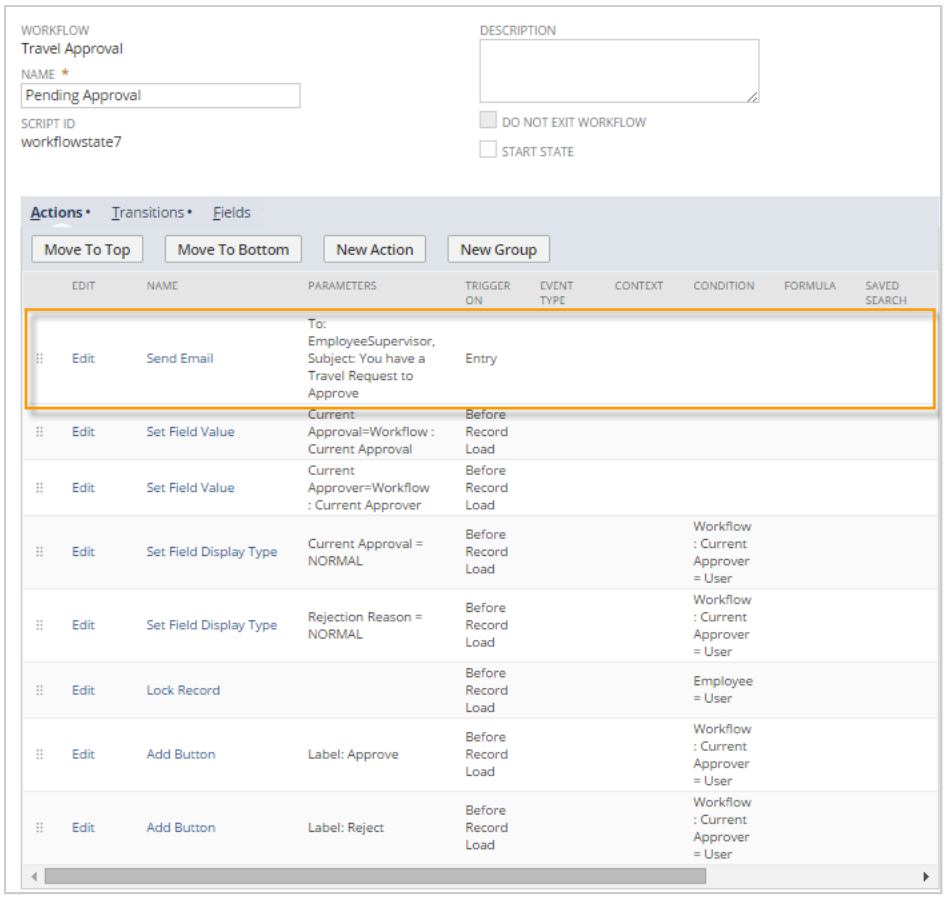
For example, a state has a Send Email action set to run on the Entry trigger, and the record enters the state on the Before Record Load server trigger. But, the Before Record Load trigger isn't a valid type for the Send Email action. Consequently, the Send Email action doesn't run.

If you use the After Record Submit trigger on the transition into the state, any Send Email action set to trigger on Entry executes, but only the first time the record enters the state. For more information, see Rules and Guidelines for Workflow Triggers and Trigger Execution.

For a list of the valid actions for the Entry trigger, see Workflow Triggers Quick Reference.

Entry Trigger Example

The following state shows actions set to run on the Entry and the Before Record Load triggers:



Trigger Type	Workflow Layout
Entry	The Send Email action executes when the record enters the state for the first time. If the record enters the state a second time, the Send Email action does not run again.
Before Record Load	All other actions run on Before Record Load, or each time the records loads when the record is in the Pending Approval state.

This state is designed so that after a Travel Request is created, the record enters the Pending Approval state on an After Record Submit, and NetSuite sends the email notifying the supervisor. The email only needs to be sent one time, not multiple times. Consequently, the Send Email action is set to run on the Entry trigger.

Guidelines for Using the Entry Trigger

Important: Use the following guidelines when using the Entry trigger.

If you want an action or transition to run every time a record enters a state, use a more specific trigger to identify when the action or transition should run.

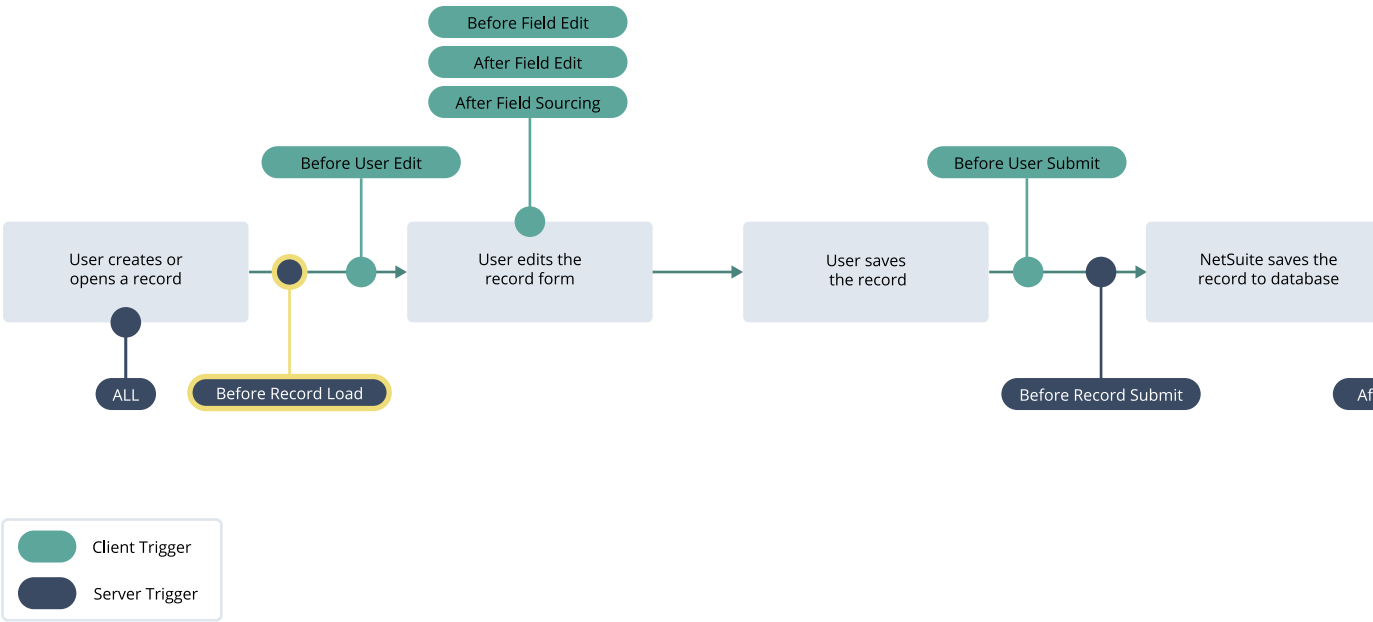
Before Record Load Trigger

The Before Record Load trigger is a server trigger and executes before a record loads into the browser. Actions and transitions set to run on Before Record Load run on the NetSuite server, after a user clicks **Edit** or **View**, and before the record loads and the user has access to the record.

The Before Record Load trigger can be used on the following elements of a workflow:

- Workflow initiation. See Workflow Initiation Triggers and SuiteFlow Trigger Execution Model.
- Actions. For a list of actions that support the Before Record Load trigger, see Workflow Triggers Quick Reference.
- Transitions. See Transition Triggers.

The following diagram shows typical record events and when the Before Record Load trigger executes:

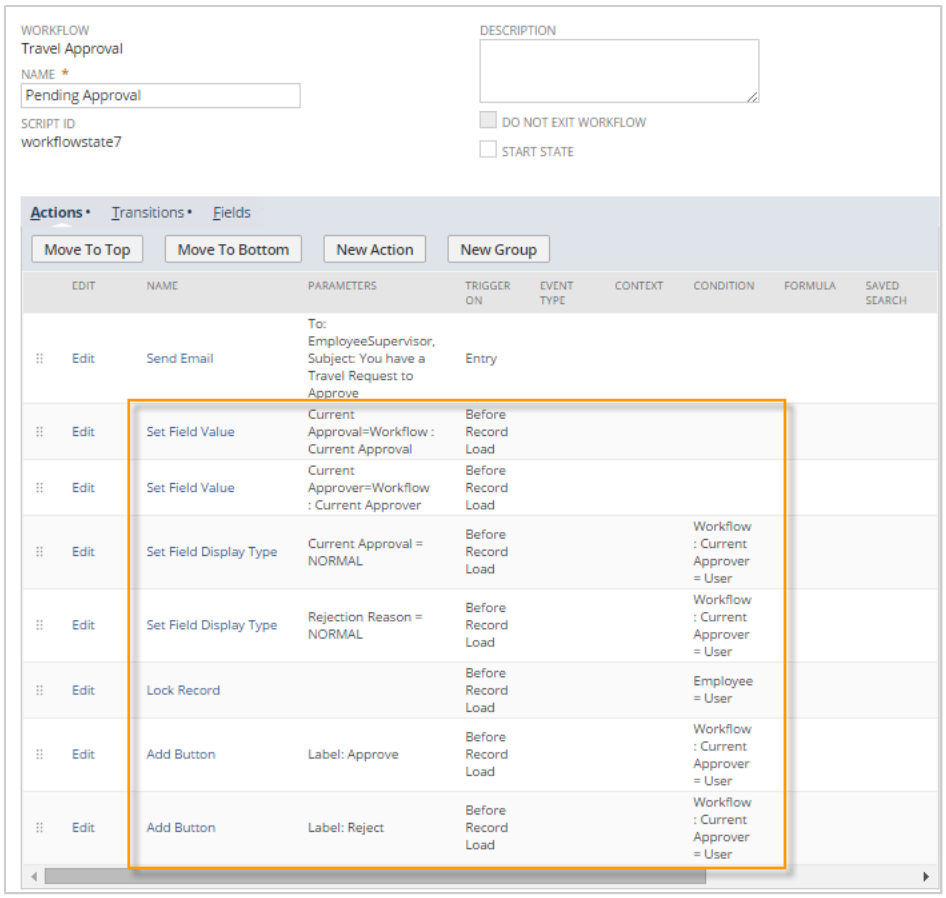


In general, use the Before Record Load trigger when you want to use a workflow to make changes to the record before the record loads into the browser. For example, use the Before Record Load trigger in the following situations:

- Add or remove buttons, depending on the user role or other conditions.
- Perform calculations based on field values and display those values when the records loads.
- Lock the record to make the record uneditable for specific users or user roles.
- Change the display type for fields to make certain fields required or hide them.
- Validate the record or check the record for permissions to prevent a record from being viewed.

Before Record Load Trigger Example

The following screenshot shows actions for a state set to run on the Before Record Load and Entry triggers:



Trigger Type	Action Execution
Before Record Load	Several actions may run before the record loads into the browser, depending on the user that accesses the record: ■ The two Set Field Value actions run for any user. ■ The two Set Field Display Type actions and the two Add Button actions run, only if the **Current Approver** field for the Travel Request is the user accessing the record. ■ The Lock Record action executes if the user accessing the record is the employee who submitted the Travel Request.
Entry	The Send Email action executes when the record enters the state for the first time.

This state is designed so that whenever the Travel Request record gets accessed, the approval buttons are added for the approver of the Travel Request and **Current Approval** and **Rejection Reason** fields become editable.

For the employee that submitted the Travel Request, the record is only locked, the buttons do not appear, and the **Current Approval** and **Rejection Reason** fields appear but are not editable.

Guidelines for Using the Before Record Load Trigger

Important: Use the following guidelines when using the Before Record Load trigger.

- Refreshing the browser reloads a record. If a user refreshes the browser during editing or viewing of a record in a state, all Before Record Load actions in that state run again.

- You cannot set field values on an existing record if the Set Field Value actions run on a Before Record Load trigger. Use the Set Field Value action with a Before Record Load trigger for new records or for setting workflow fields on new or existing records. Use a custom action to update fields on an existing record.
- The Before Record Load and Before User Edit triggers appear to be functionally similar. However, actions that use the Before Record Load trigger run on the server, whereas actions that use the Before User Edit trigger run in the browser.

  In addition, actions set to trigger on Before Record Load run every time the record is loaded. Actions set to trigger on Before User Edit only run right before the user edits the record. If an action modifies a record on a Before User Edit trigger, the edits are lost unless the user saves the record.

  The following table lists the action types that can be performed on each trigger and might need to be performed before the record appears to a user:

Type of Action	Before Record Load	Before User Edit
Set Field Value (new records)	Yes	Yes
Set Field Value (existing records)	No	Yes
Set Field Value (workflow fields)	Yes	No
Set Field Display Type (Disabled, Hidden, Normal)	Yes	Yes
Set Field Display Type (Inline)	Yes	Yes
Set Field Required	Yes	Yes
Set Field Display Label	Yes	Yes
Add Button, Remove Button	Yes	No
Lock Record	Yes	No

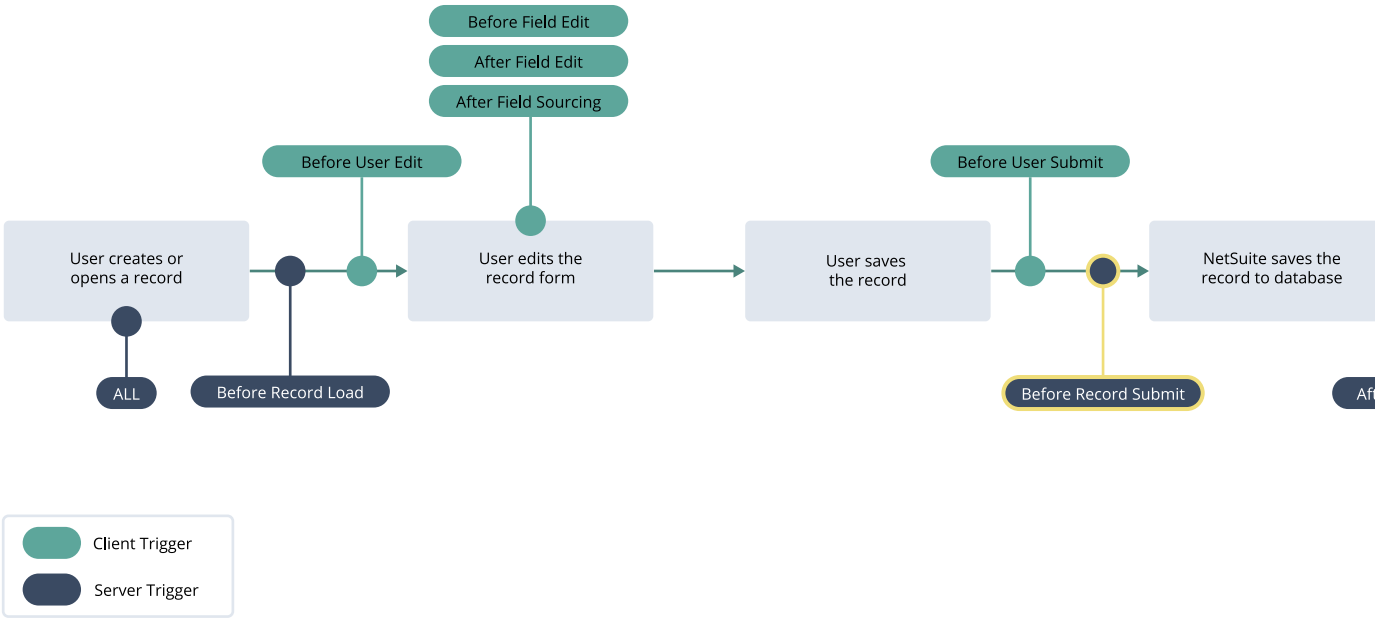
Before Record Submit Trigger

The Before Record Submit trigger is a server trigger and executes after a user clicks **Save** on a record, but before NetSuite saves the data to the database. Actions and transition set to run on Before Record Submit run on the NetSuite server, before the record data is 'submitted' to the database.

The Before Record Submit trigger can be used for the following elements of a workflow:

- Workflow initiation. See Workflow Initiation Triggers and SuiteFlow Trigger Execution Model. For an example, see Before Record Submit Trigger Example.
- Actions. For a list of actions that support the Before Record Submit trigger, see Workflow Triggers Quick Reference.
- Transitions. See Transition Triggers.

The following diagram shows typical record events and when the Before Record Submit trigger executes:



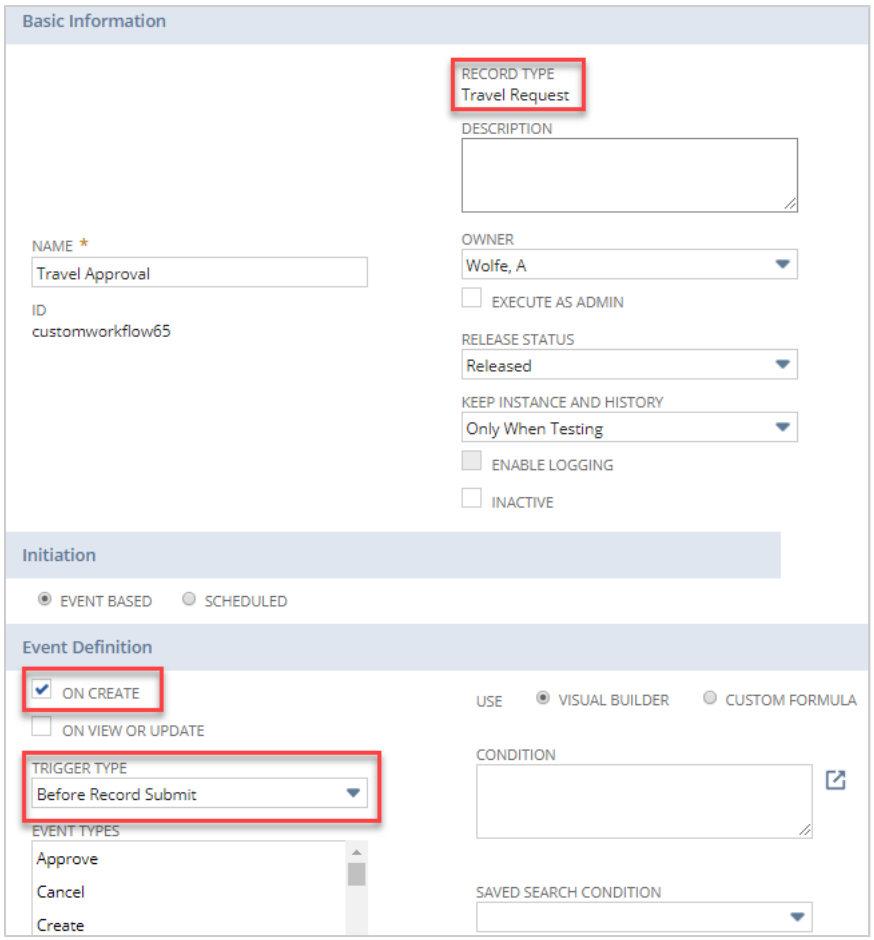
In general, use the Before Record Submit trigger when you want to use a workflow to make changes to the record before NetSuite saves the data to the database. For example, use the Before Record Submit trigger in the following situations:

- Validate record data before NetSuite submits it to the database.
- Perform permission checks or validate restrictions before NetSuite writes the data to the database. Use a Return Error Action on a Before Record Submit trigger to prevent a user from saving the record until the user correctly modifies the record.
- Set certain field values for a record, based on other field values entered by the user.

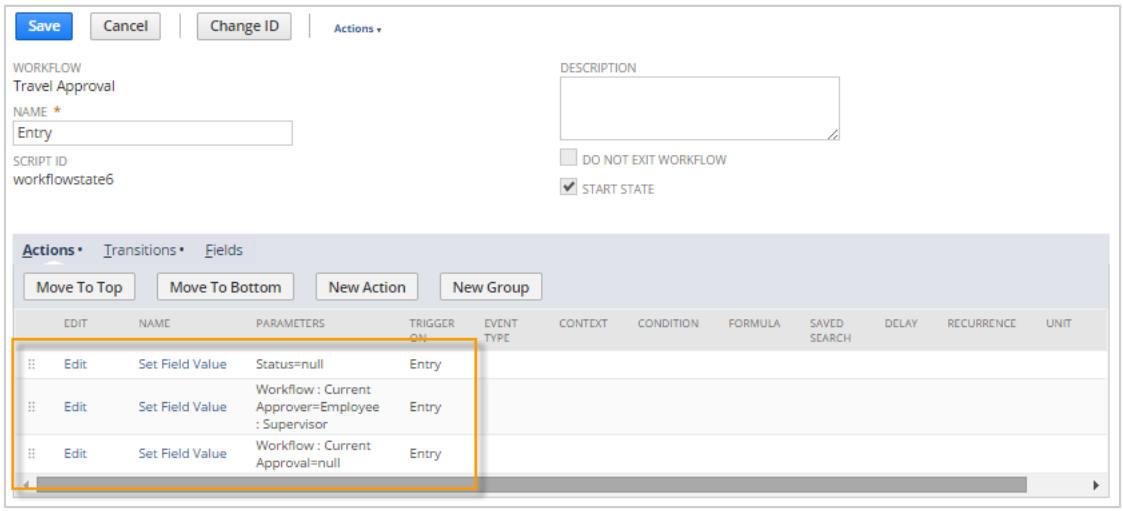
Before Record Submit Trigger Example

The following screenshots show the workflow definition and entry state for a workflow that initiates after a user clicks **Save** on a new Travel Request record:

Workflow Definition



Entry State



User Behavior	Workflow Behavior
User creates a new Travel Request record.	None.

User Behavior	Workflow Behavior
User clicks **Save** on the Travel Request record.	Workflow instance initiates, enters the entry state, executes the three Set Field Value actions. In this state, a transition executes on an After Record Submit trigger. Consequently, the record transitions to the next state after the record data is saved to the database.

The state is designed so the actions run on the **Entry** trigger. They're not using the **Before Record Load** trigger, for example, because the workflow instance didn't start until the Before Record Submit trigger ran. If the actions were set to run on the **Before Record Load** trigger, they wouldn't run, because the record entered the state on a **Before Record Submit** trigger. For more information, see Rules and Guidelines for Workflow Triggers and Trigger Execution.

Before Record Submit Trigger Guidelines

Important: Use the following guidelines when using the Before Record Submit trigger.

- The **Before Record Submit** and **Before User Submit** triggers appear to be functionally similar. However, actions that use the **Before Record Submit** trigger run on the server, whereas actions that use the **Before User Submit** trigger run in the browser.

  For example, a **Return User Error** on a **Before Record Submit** trigger would run on the server. The user would return to the record and all previously entered data would be lost. If a **Return User Error** or **Show Message** action executes on a Before User Submit trigger instead, the user clicks **OK** on the message and continues editing the record with no loss of data.
- In addition to the **Before User Submit** trigger, the **Before Record Submit** trigger also appears similar to the **After Record Submit** trigger, since they both run after the user clicks **Save** on a record. However, for the **Set Field Value**, **Custom, Create Record, Initiate Workflow**, and **Subscribe To Record** actions, other differences may impact the workflow. See Comparing the Before Record Submit and After Record Submit Triggers.

After Record Submit Trigger

The After Record Submit trigger is a server trigger and executes after NetSuite saves the record data to the database. Actions and transitions set to run on After Record Submit run on the NetSuite server, after the record data is saved to the database.

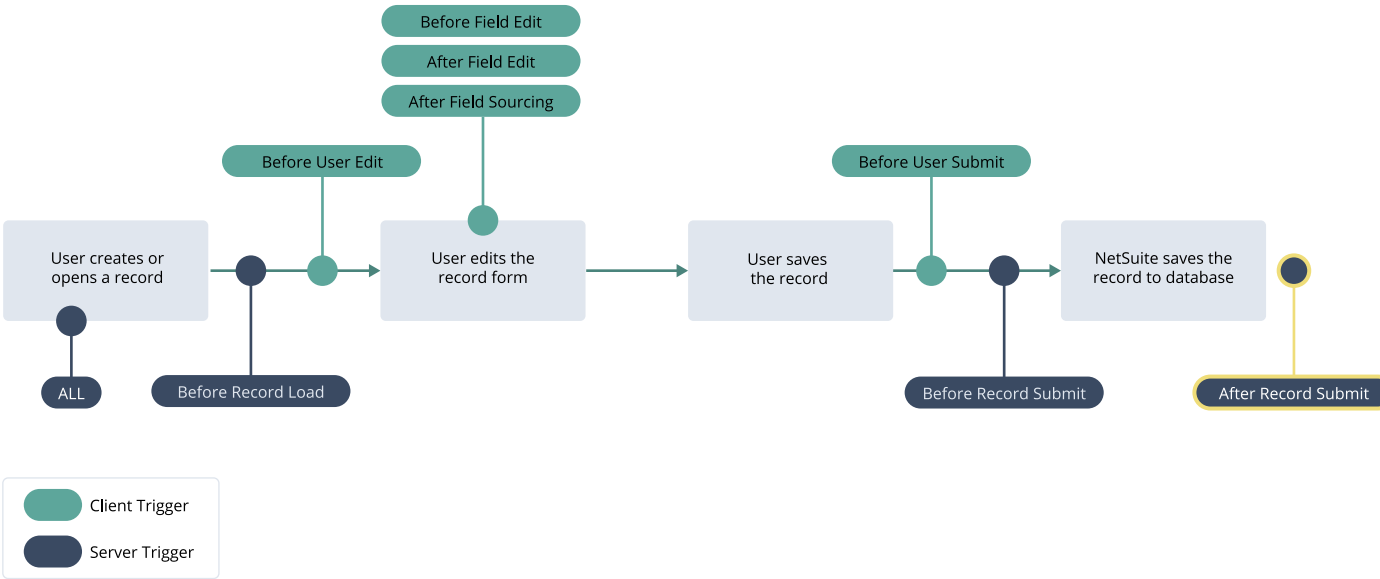
Note: In System Notes, NetSuite logs the role for the saved record as Administrator, even for non-Administrator users.

When an action executes on an After Record Submit trigger, NetSuite internally reloads the record, executes the action, and then saves the record again. NetSuite only saves the record again if the record has changed by the action.

The After Record Submit trigger can be used for the following elements of a workflow:

- Workflow initiation. See Workflow Initiation Triggers and SuiteFlow Trigger Execution Model.
- Actions. For a list of actions that support the After Record Submit trigger, see Workflow Triggers Quick Reference.
- Transitions. See Transition Triggers.

The following diagram shows typical record events and when the After Record Submit trigger executes:



In general, use the After Record Submit trigger when you want to use a workflow to make changes to the record after NetSuite saves the data to the database. For example, use the After Record Submit trigger in the following situations:

- A field or field value value is not available until after NetSuite saves the record.
- Actions should occur after NetSuite saves the record. These actions can include the Send Email, Go To Page or Go To Record, or Create Record actions.
- Record must transition to another state after NetSuite saves the record.
- Some fields on the current record are set by NetSuite by other fields that are changed when the record is submitted.
- You want to perform other actions on an After Record Submit trigger that require you do computation and then store the result in the current record.

After Record Submit Trigger Example

The following screenshot shows actions for a state set to run on the Before User Submit and After Record Submit triggers. The actions on the After Record Submit trigger require specific field values to be present in the database to run.

Edit	Set Field Value	Service Manager=User : Supervisor	Before User Submit		✓
Edit	Set Field Mandatory	Emergency Reason = True	After Field Edit	Urgency = Emergency	✓
Edit	Set Field Value	Repair Rank={custrecord19}* {custrecord21}	After Field Edit		✓
Edit	Set Field Value	Full Description={custrecord13}+': '+{custrecord14}	After Field Edit		✓
Edit	Return User Error	Customer Rank must be between 1 and 10.	After Field Edit	Customer Rank > 10	✓
Edit	Send Email	To: CustomerE-mail, Subject: Your repair request is being processed	After Record Submit		✓
Edit	Send Email	To: Service Manager, Subject: Bike repair to approve	After Record Submit		✓

Trigger Type	Action Behavior
Before User Submit	Sets the **Service Manager** field on the record, which is required for one of the Send Email actions.

Trigger Type	Action Behavior
After Record Submit	NetSuite sends both emails after NetSuite saves the record data to the database. The first Send Email action requires the Customer information from the record. The required data is present in the database after the record save. The second Send Email action requires the **Service Manager** field value, which is set before the record save by the Set Field Value action.

Comparing the Before Record Submit and After Record Submit Triggers

Although actions set to run on the Before Record Submit and After Record Submit triggers both occur after the user clicks **Save** on a record, their use can affect edits made to the record.

The following table describes the differences between the two triggers for the Set Field Value, Custom, Create Record, Initiate Workflow, and Subscribe To Record actions:

Before Record Submit	After Record Submit	Other Considerations
All change made to the record by the workflow and the user are stored at the same time.	Any change made on the record by the workflow causes the record to be saved again when the workflow completes.	The Before Record Submit trigger results in better performance, for actions such as Set Field Value, as the record does not need to be potentially saved twice.
If the workflow processing fails for any reason, NetSuite cancels the entire operation. Any edit made by user is lost.	If the workflow processing fails for any reason, the data entered by the user has already been saved. The only changes that are not saved are those made by the actions that run on the After Record Submit trigger.	Use the Before Record Submit trigger for any actions, such as Set Field Value, that depend on record consistency. Modifications to the record made on the After Record Submit trigger are rolled back in case of failure, which may leave the record in an inconsistent state. The inconsistency results from necessary record changes not being made.
Any business logic that executes when the record is stored has not executed yet, and can cause an inconsistent state of the record.	Any business logic that executes when the record is stored has already executed, resulting in a more consistent state for the record.	Typically, actions that use both trigger types modify the record but also may need to read the record, usually in an action condition. In this case, the After Record Submit trigger may be more effective.

Note: Most other actions can use either of the above triggers, but not both.

Exit Trigger

The Exit trigger is a server trigger and executes the first time a record exits a state in a workflow. Use the Exit trigger if you want an action to run only when a record exits a state for the first time. The Exit trigger applies to all actions except the Confirm and Show Message actions.

The actions and transitions that run on the Exit trigger depend on the server trigger on which the record exits the state. If the record exits the state on an After Record Submit trigger, only actions and transitions that may run on the After Record Submit trigger will run. You can control the trigger on which a record exits a state by using the correct trigger on the transition from the current state to another state.

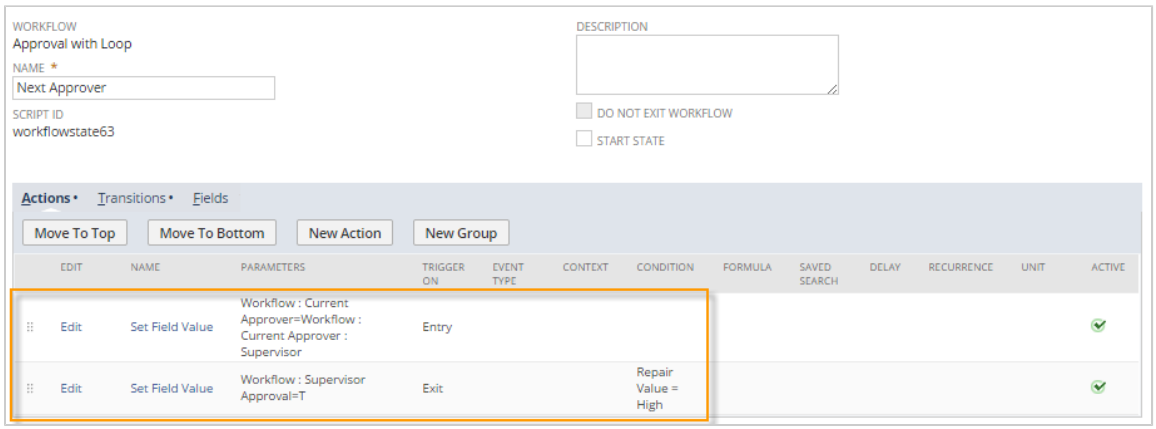
For example, a state contains a Lock Record action set to run on the Exit trigger and the record exits the state on the After Record Submit server trigger. However, the After Record Submit trigger is not a valid

trigger type for the Lock Record action. Consequently, the Lock Record action does not run. However, if you use the Before Record Load trigger on the transition from the state, any Lock Record action set to trigger on Exits executes, but only the first time the record exits the state. For more information, see Rules and Guidelines for Workflow Triggers and Trigger Execution.

For a list of the valid actions for the Exit trigger, see Workflow Triggers Quick Reference.

Exit Trigger Example

The following state shows actions set to run on the Entry and Exit triggers:



Trigger Type	Workflow Behavior
Entry	The Set Field Value action executes when the record enters the state for the first time and sets the **Current Approver** field to the supervisor for the current approver.
Exit	The Set Field Value action executes when the record exits the state and sets the **Supervisor Approval** flag on the record to **True** if the **Repair Value** is set to **High**.

Exit Trigger Guidelines

Important: Use the following guidelines when using the Exit trigger.

In some cases, you can use the Entry and Exit triggers for the same purpose. If you require an action to only run one time in a workflow, setting it to run on Exit of one state or on Entry of a target state accomplishes the same result.

Scheduled Trigger

The Scheduled trigger is available for workflow initiation, transitions, and some actions. The Scheduled trigger directs NetSuite to initiate a workflow or run an action or transition on a schedule. Set a schedule for workflow initiation or an action or transition execution by setting the **Trigger On** property to **Scheduled** and setting any additional schedule or condition requirements.

NetSuite runs a backend scheduler that processes schedules every 30 minutes. Workflow scheduled tasks include workflows scheduled to initiate or actions and transitions scheduled to run. When the scheduler finds a workflow task that meets the schedule and all conditions associated with the task, NetSuite executes the task.

The method by which a scheduled workflow task gets executed depends on the type of task:

Workflow Task Type	Execution Method
Workflow initiation	When you set the schedule for workflow initiation, set the workflow status to Released, and then save the workflow definition. Every 30 minutes, the scheduler analyzes the schedule requirements and conditions for workflow initiation. If a workflow definition meets the schedule and condition requirements, the scheduler runs the saved search and initiates an instance of the workflow on each record returned by the saved search. For more information, see Initiating a Workflow on a Schedule and Scheduling a Workflow.
Action	A scheduled action is considered for execution when a record in a workflow instance stays in a state with a scheduled action. Every 30 minutes, the scheduler analyzes the schedule properties for such actions. If an action meets the schedule properties and any additional conditions on the action, the action executes on the workflow instance and record. For more information, see Scheduling an Action and Action Conditions.
Transition	A scheduled transition is considered for execution when a record in a workflow instance stays in a state with a scheduled transition. Every 30 minutes, the scheduler analyzes the schedule properties for such transitions. If the transition meets the schedule properties and any additional condition requirements, the transition executes on the workflow instance and record. See Scheduling a Transition and Transition Conditions.

Note: The backend scheduler that processes scheduled tasks runs every 30 minutes, but depending on the number of scheduled tasks, a particular task may be evaluated, or considered for execution, later. Similarly, after a task is evaluated for execution, the execution can be delayed due to number of tasks being processed by NetSuite. Consequently, a task scheduled for exact time may not be executed exactly at the specified time. The execution may occur at a later point. In addition, a task will never run before the scheduled time

Time Zones for the Scheduled Trigger

When you select the date and time to run a scheduled task, the task runs in the time zone of the NetSuite user that creates the schedule. Whenever a user defines a new schedule or edits an existing schedule, the dates and times used in the schedule are saved in the time zone of the current user. Even if the user later changes the time zone preference, without changing the schedule, the schedule keeps the original date and time, using the original time zone.

Note: NetSuite does not consider the time zone of the workflow owner or the user who initiated a workflow with a scheduled action or transition.

Scheduled Trigger Guidelines

Important: Use the following guidelines when using the Scheduled trigger.

- Scheduled workflows, actions, or transitions do not run if the **Release Status** of the workflow is not set to **Released**. See Release Status for Workflow Instances.

- For list of supported actions for the Scheduled trigger, see Workflow Triggers Quick Reference.
- Scheduled actions do not run in an exit state after a record enters the exit state. The record exits the workflow before the scheduled action executes. See Exit States.

Client Triggers Reference

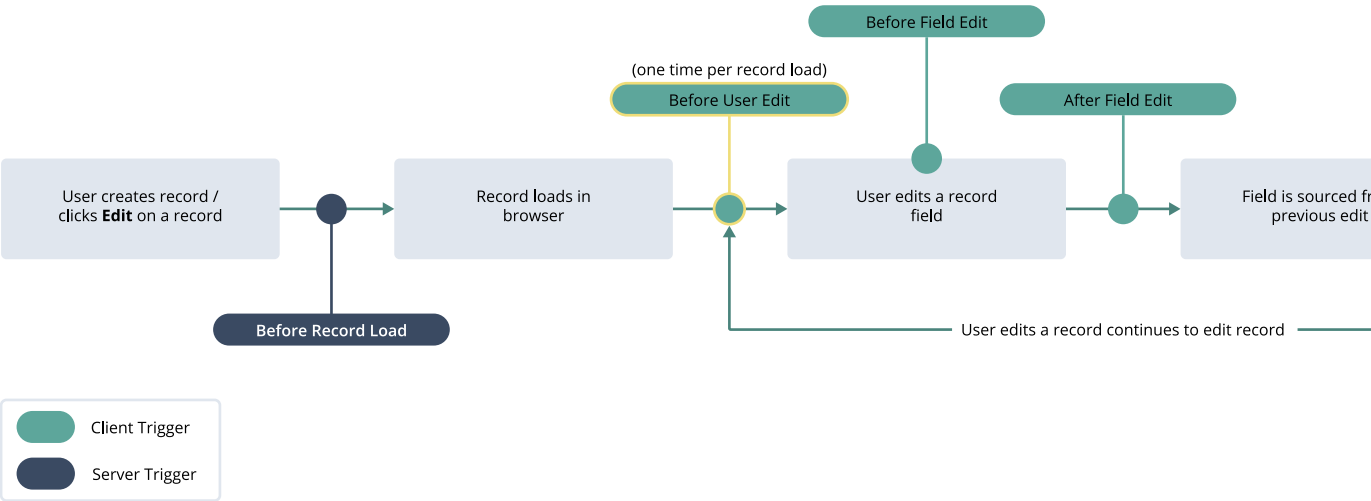
The following table describes the client triggers and their functionality. See Workflow Triggers and Client Triggers for general information about client triggers.

Trigger Name	Description
Before User Edit	Executes after a record form loads into the browser and before the user makes any changes to the form. See Before User Edit Trigger.
Before Field Edit	Executes before a user completes changes to a field on a record form. See Before Field Edit Trigger.
After Field Edit	Executes after a user completes changes to a field on a record form. See After Field Edit Trigger.
After Field Sourcing	Executes after all dependent field values on a record form have been populated. See After Field Sourcing Trigger.
Before User Submit	Executes after a user clicks **Save** on a record and before the Before Record Submit server trigger executes. See Before User Submit Trigger.

Before User Edit Trigger

The Before User Edit trigger is a client trigger and executes after a record form loads into the browser and before the user makes any changes to the form. Before User Edit is a client trigger because it occurs after the form loads into the browser. The trigger occurs due to user edit of an existing record or creation of a new record. Before User Edit only occurs one time when the record form is present in the browser.

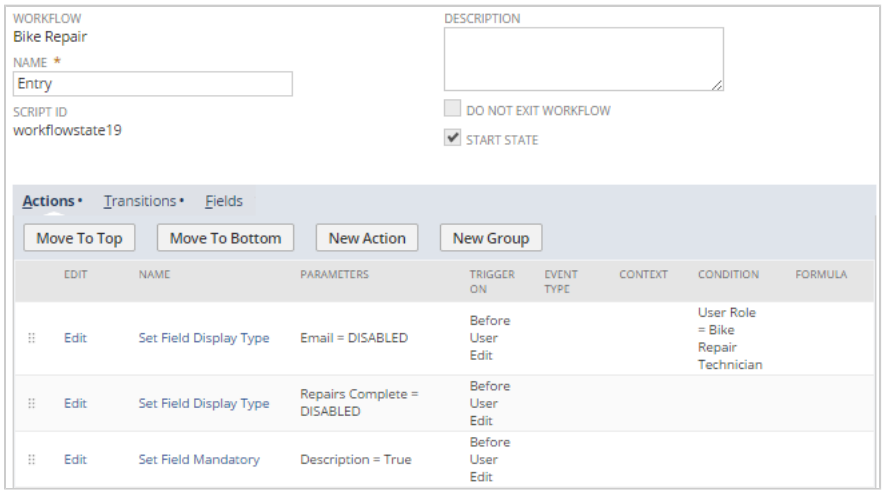
The following diagram shows common record edit events and when the Before User Edit trigger executes:



Use this trigger to make changes to the record form in the browser before the user edits any field. You can use this trigger with any of the field value actions, such as the Set Field Value action, or with the Return User Error action. For a list of all the actions that support this trigger, see Workflow Triggers Quick Reference.

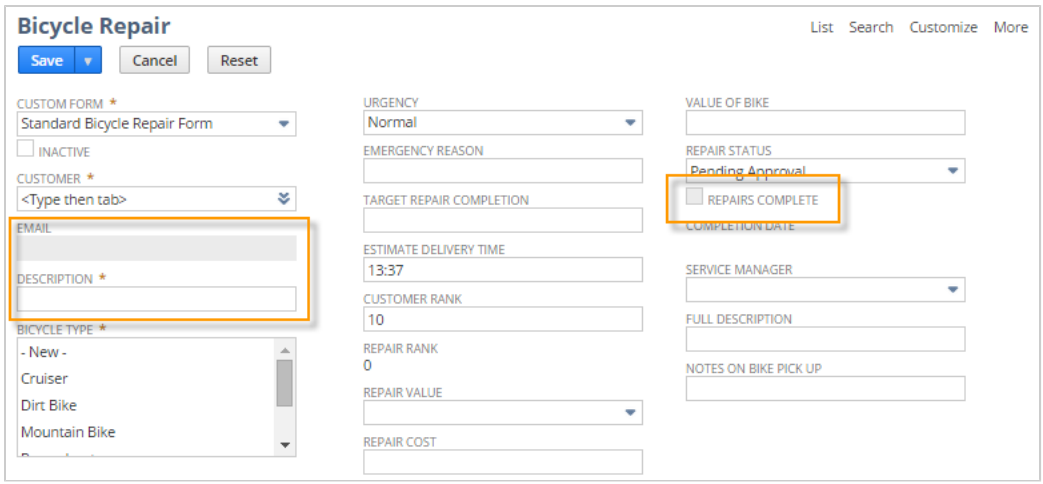
Before User Edit Trigger Example

The following screenshot shows a state with actions set to run on the Before User Edit trigger:



Action Type	Action Execution
Set Field Display Type	The two Set Field Display Type actions disable the **Email** field and the **Repairs Complete** checkbox, respectively. The fields are visible but are not editable.
Set Field Required	On a Bike Repair record, the **Description** field is not required by default. The Set Field Required makes the **Description** field required.

This state is designed to customize the record form, depending on the user role accessing the record in the workflow. The following screenshot shows the respective action results on the record form:



Before User Edit Trigger Guidelines

Important: Use the following guidelines when using the Before User Edit trigger.

- For SuiteScript users, the Before User Edit trigger is the workflow equivalent of the **pageInit** client event. For JavaScript, execution of the Before User Edit trigger is similar to the **onLoad** client event.
- If a user reloads a record during the time that the record is in a state that includes actions that run on the Before User Edit trigger, the actions run again.
- The Before Record Load and Before User Edit triggers appear to be functionally similar. However, actions that use the Before Record Load trigger run on the server, whereas actions that use the Before User Edit trigger run in the browser.

  In general, you should use the Before Record Load trigger over the Before User Edit trigger. The server-side processing of actions is typically safer than client-side processing because there is a greater assurance of consistency in behavior. There can be inconsistent behavior if something unexpected occurs in the client environment, such as a browser upgrade.

  The following table lists the action types that can be performed on each trigger and might need to be performed before the record appears to a user:

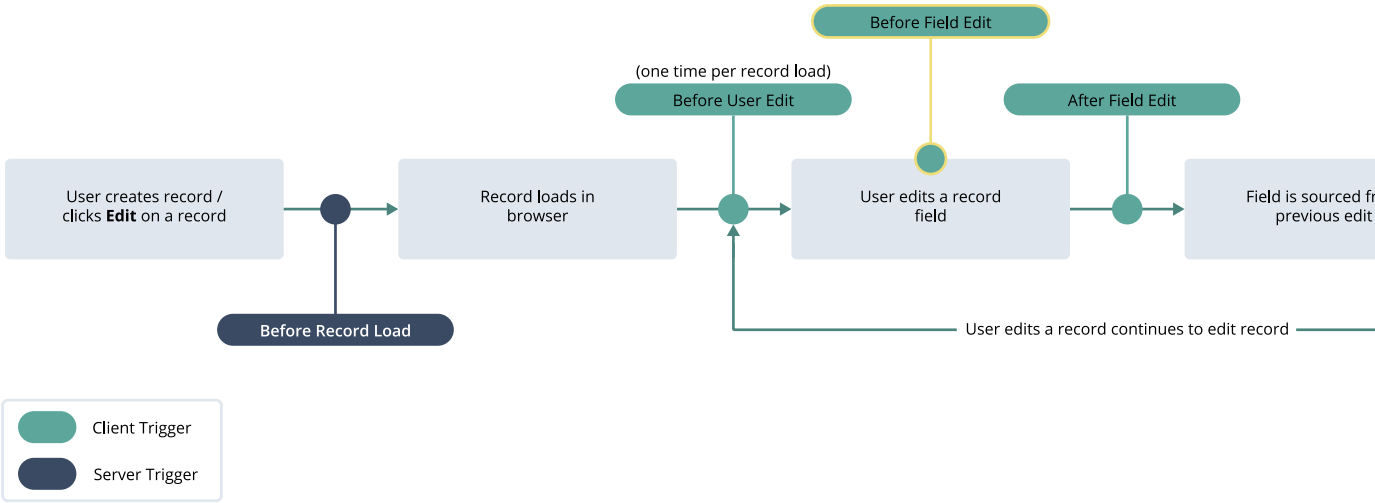
Type of Action	Before Record Load	Before User Edit
Set Field Value (new records)	Yes	Yes
Set Field Value (existing records)	No	Yes
Set Field Display Type (Disabled, Hidden, Normal)	Yes	Yes
Set Field Display Type (Inline)	Yes	No
Set Field Required	Yes	Yes
Set Field Display Label	Yes	No
Add Button, Remove Button	Yes	No
Lock Record	Yes	No

Before Field Edit Trigger

The **Before Field Edit** trigger is a client trigger and executes before a user completes changes to a field on a record form. **Before Field Edit** is a client trigger because it occurs during the edit of a record during the time that it is loaded in the browser. **Before Field Edit** only occurs during the edit of a field on a record form when the record is in a state.

When you use the **Before Field Edit** trigger for an action, you must also identify the name of the client field in the **Client Fields** multi-select box for the action. This identifies which record field to run the action on. For more information about **Client Fields** for actions, see Creating an Action and Using Conditional Fields with Actions.

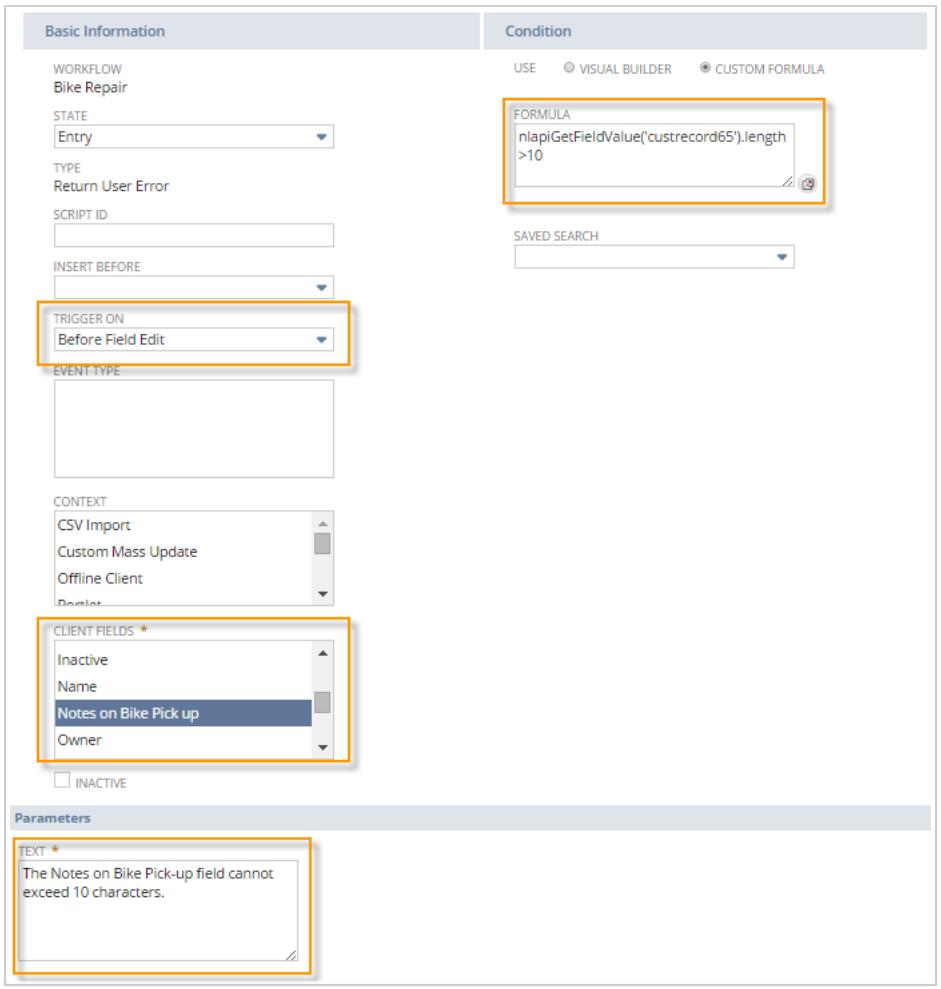
The following diagram shows common record edit events and when the **Before Field Edit** trigger executes:



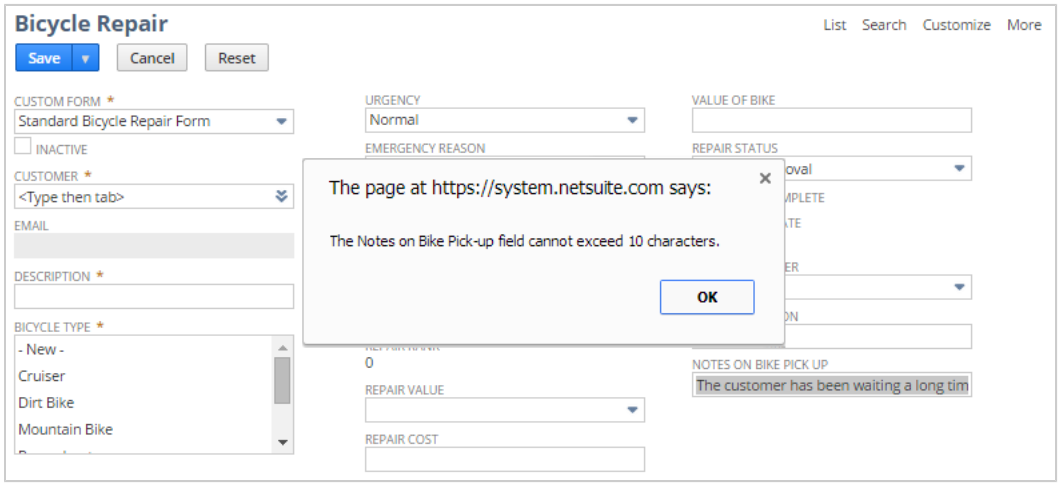
Use this trigger to validate field lengths, restrict field entries to a predefined format, or validate a field against values in an associated field. For example, use this trigger with a Return User Error action to alert users that they must fix a field value before the user continues editing the form. For a list of all the actions that support this trigger, see Workflow Triggers Quick Reference.

Before Field Edit Trigger Example

The following screenshot shows a Return User Error action used to validate the value of the **Notes on Bike Pick-up** field on a Before Field Edit trigger:



The following screenshot shows the results of the Return User Error action on the record form. The error appears after the user moves away from the **Notes on Bike Pick-up**. Clicking **OK** returns the window focus to the field that needs fixed. The popup keeps appearing until the user fixes the error.



Before Field Edit Trigger Guidelines

Consider the following when you use the Before Field Edit trigger:

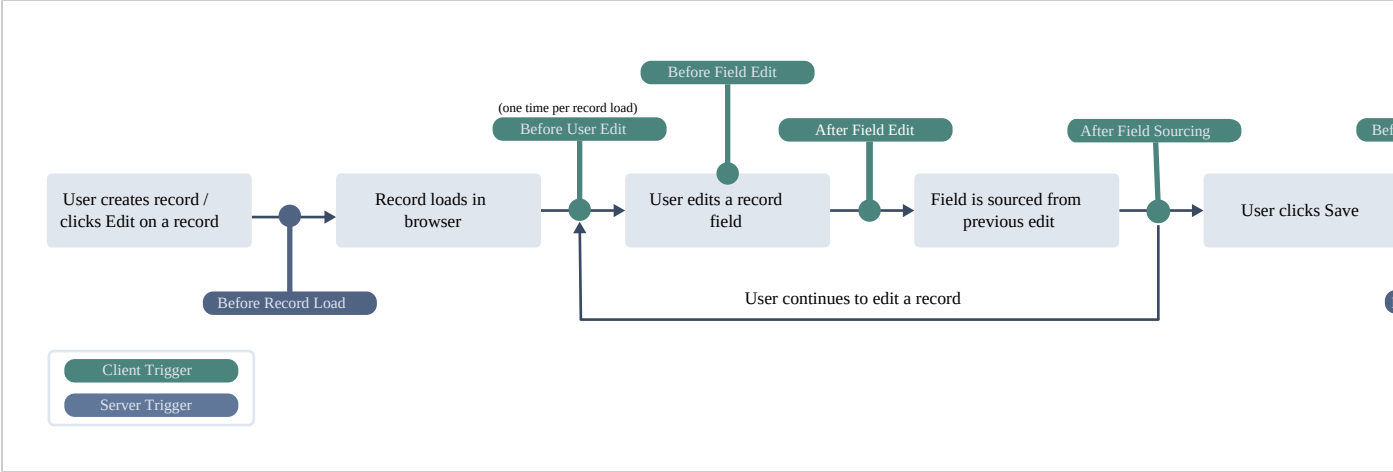
- For SuiteScript users, the Before Field Edit trigger is the workflow equivalent of the **validateField** client event. For JavaScript, the Before Field Edit trigger execution is the equivalent of an **onBlur** client event.

After Field Edit Trigger

The After Field Edit trigger is a client trigger and executes after a user completes changes to a field on a record form. After Field Edit is a client trigger because it occurs during the edit of a record during the time that it is loaded in the browser. After User Edit only occurs after the edit of a field on a record form when the record is in a state.

When you use the After Field Edit trigger for an action, you must also identify the name of the client field in the **Client Fields** multi-select box for the action. This identifies the fields that, if changed, change the values of other fields. For more information about using the **Client Fields** property on actions, see Creating an Action and Using Conditional Fields with Actions.

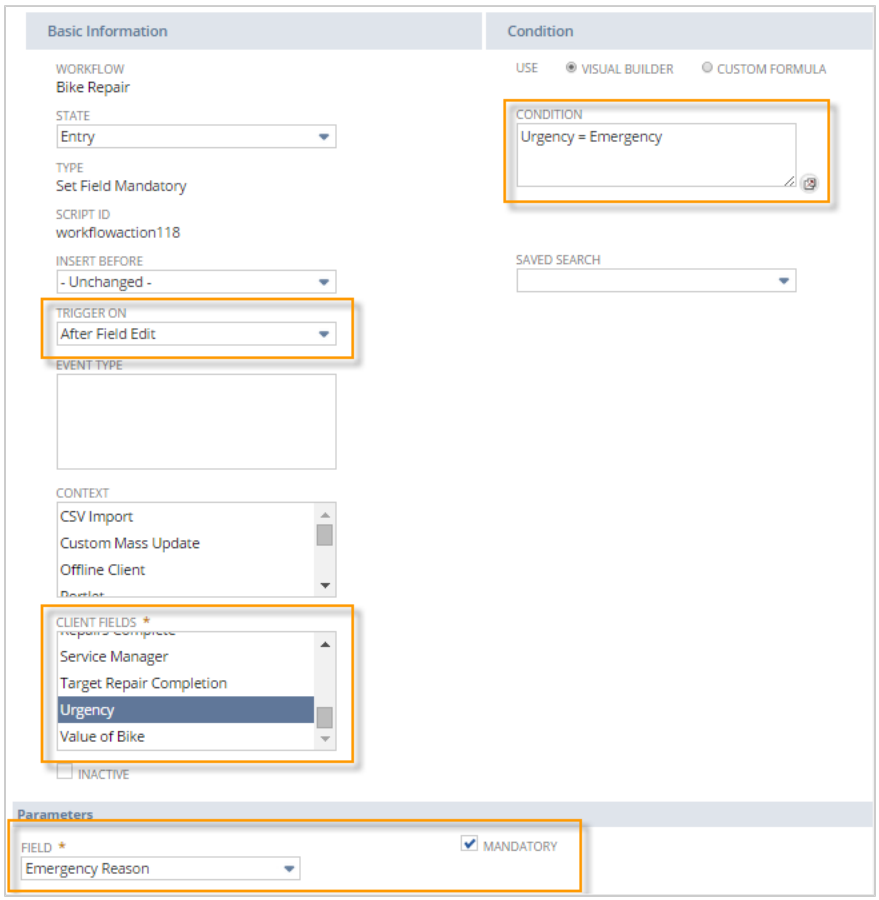
The following diagram shows common record edit events and when the After Field Edit trigger executes:



Use this trigger to set field values based on the values of other fields changed by the user. For a list of all the actions that support this trigger, see Workflow Triggers Quick Reference.

After Field Edit Trigger Example

The following screenshot shows a Set Field Required action used to set the **Emergency Reason** field to required if the value selected for the **Urgency** field is **Emergency**:



After Field Edit Trigger Guidelines

Important: Use the following guidelines when using the After Field Edit trigger.

- For SuiteScript users, the After Field Edit trigger is the workflow equivalent of the **fieldChanged** client event. For JavaScript, actions on the After Field Edit trigger run similar to an **onChange** JavaScript client event. As one field changes, so does different field.
- Actions on an **After Field Edit** trigger can also occur in response to an action on a **Before Record Load** trigger. For example, an **After Field Edit** action is set to run whenever field A changes, and an action on a **Before Record Load** trigger changes the value of field A. The A **fter Field Edit** action executes in response to the change of field A.

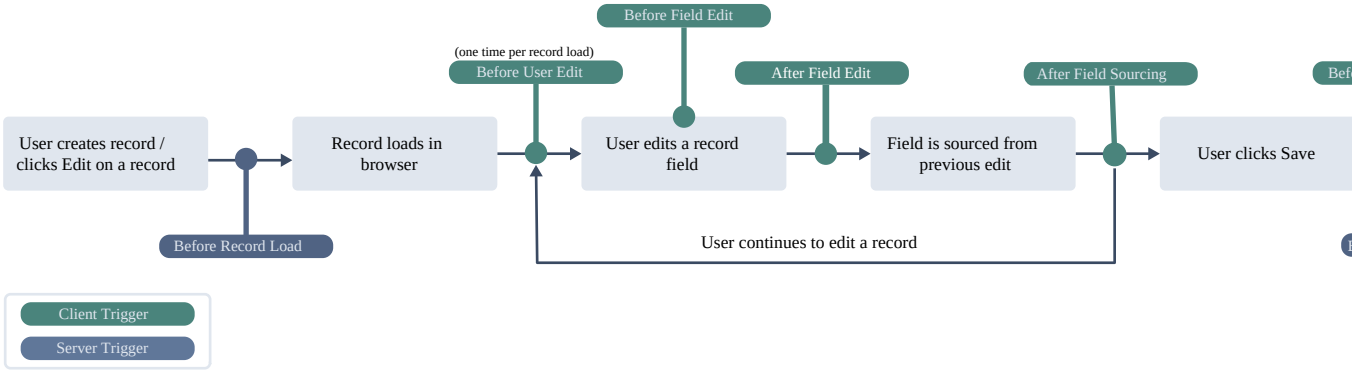
After Field Sourcing Trigger

The After Field Sourcing trigger is a client trigger and executes after all dependent field values on a record form have been populated. The fields can be populated by dependencies on other fields in the same record or in joined records. After Field Edit is a client trigger because it occurs during the edit of a record during the time that it is loaded in the browser.

For example, a user specifies a **Sales Rep** on a record and the custom **Sales Rep Email** field is populated with the sales rep email from the sales rep record. The custom field definition specifies the sourcing relationship between the **Sales Rep** and **Sales Rep Email** fields. The After Field Sourcing trigger occurs after the **Sales Rep Email** field is populated.

When you use the After Field Sourcing trigger for an action, you must also identify the name of the client field in the **Client Fields** multi-select box for the action. This identifies the fields that, if populated, populate other fields. For more information about using the **Client Fields** property on actions, see Creating an Action and Using Conditional Fields with Actions.

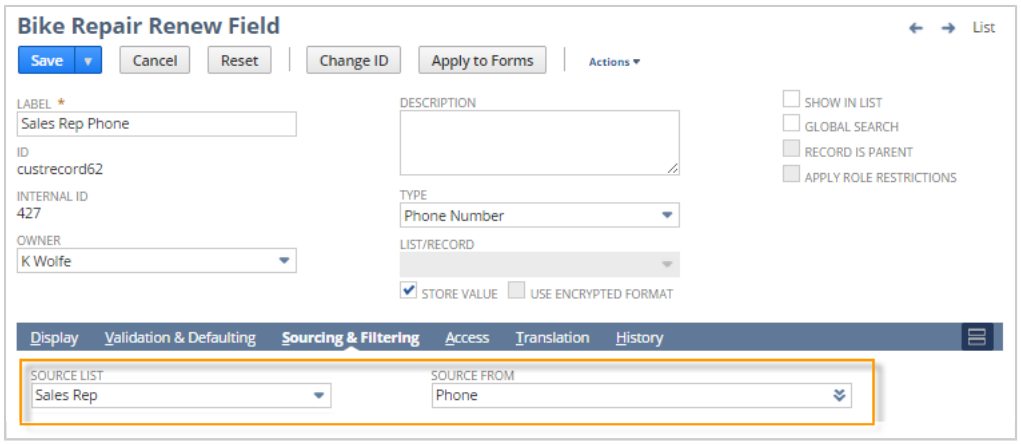
The following diagram shows common record edit events and when the After Field Sourcing trigger executes:



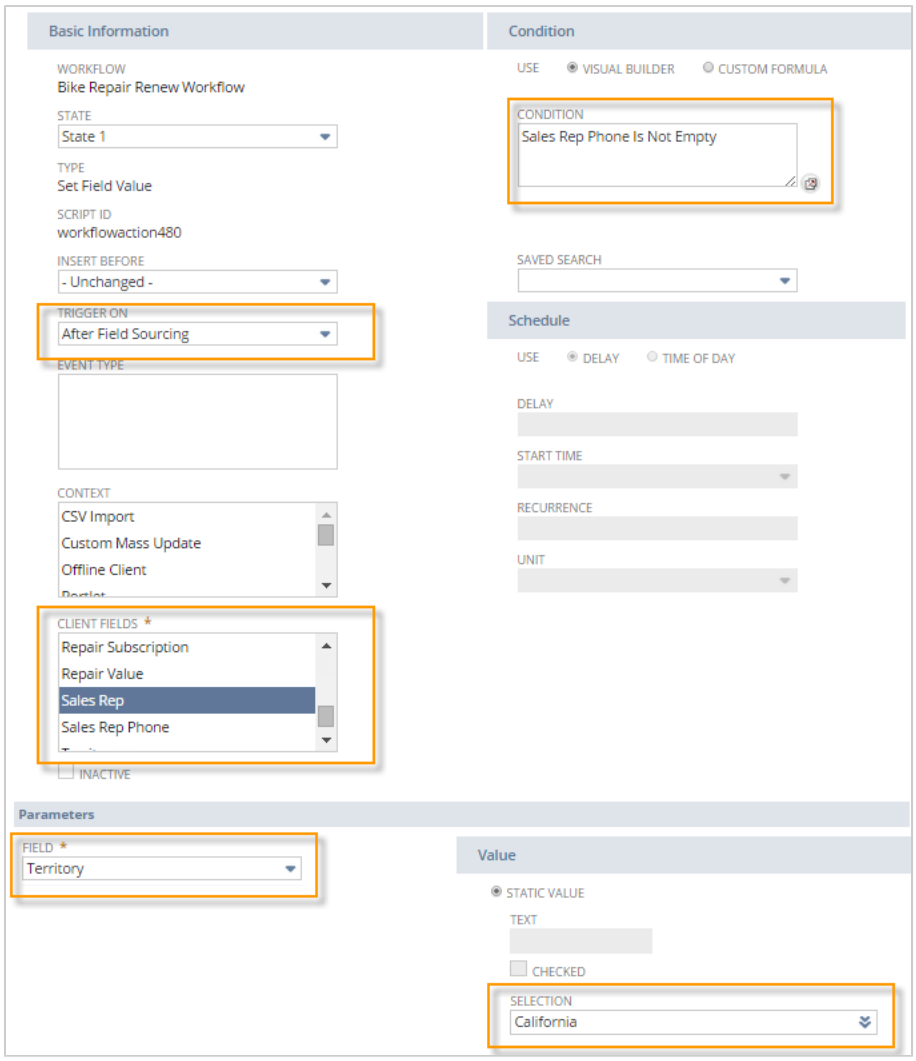
Use this trigger when you want to set field values based on other sourced values or you want to limit the users who specify field values on a record, even if the fields must contain values. For a list of all the actions that support this trigger, see Workflow Triggers Quick Reference.

After Field Sourcing Example

The following screenshot shows a custom field definition with the **Sales Rep Phone** sourced from the **Phone** field on the Sales Rep record:



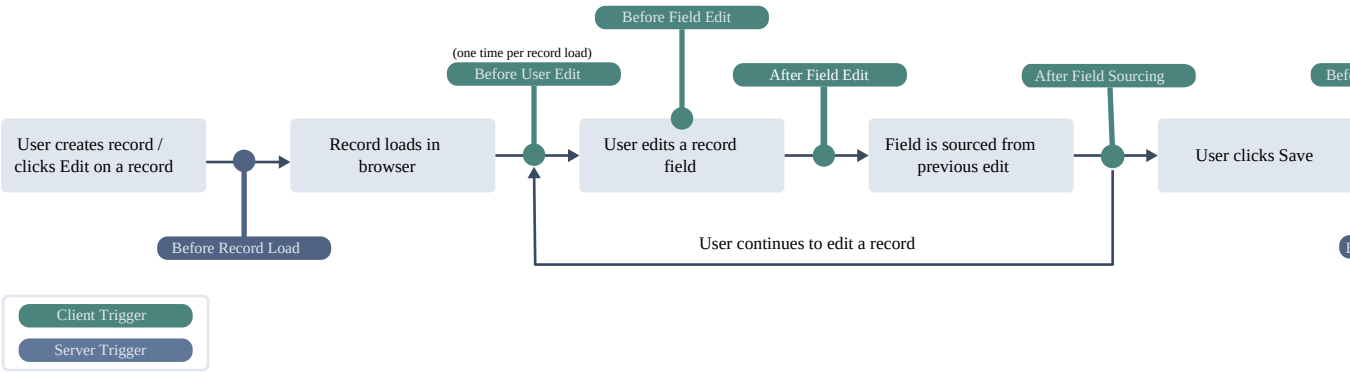
The following screenshot show a Set Field Value action that executes on the After Field Sourcing trigger to set another field, **Territory**, after the **Sales Rep** field is entered by the user on the record:



Before User Submit Trigger

The Before User Submit trigger is a client trigger and executes after a user clicks **Save** on a record and before the Before Record Submit server trigger executes. Before User Submit is a client trigger because it occurs when the form is present in the browser.

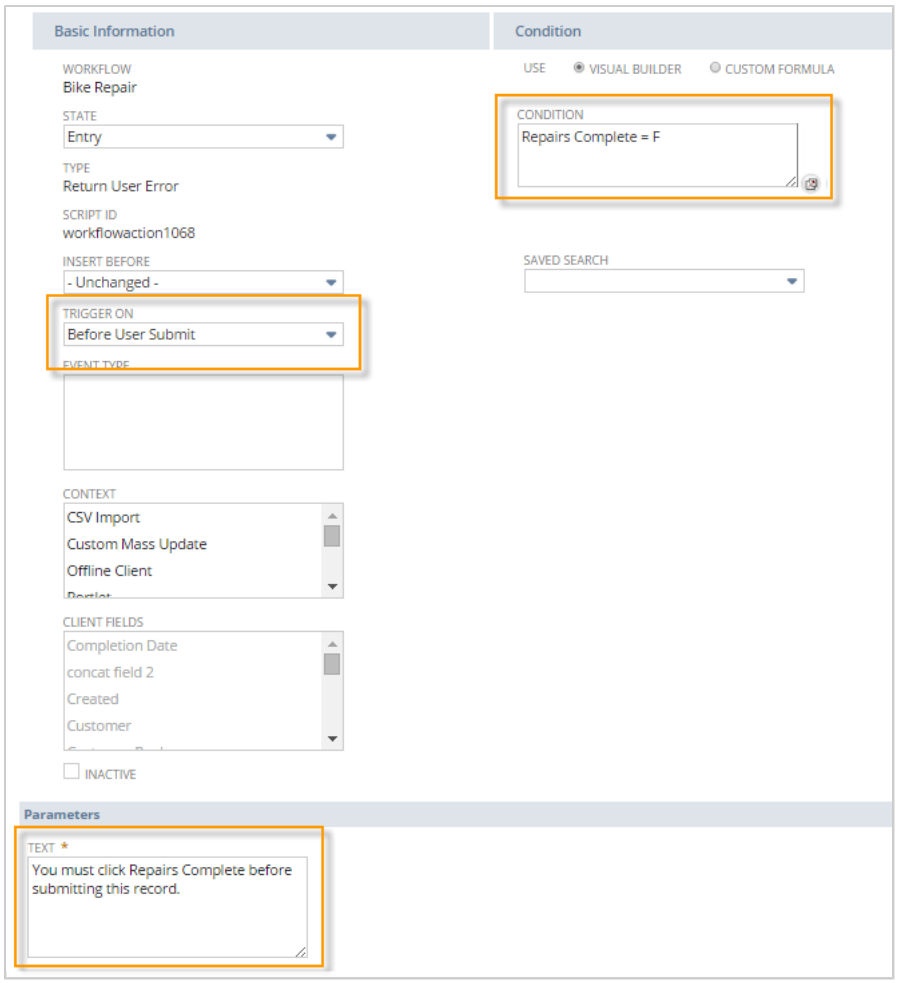
The following diagram shows common record edit events and when the Before User Submit trigger executes:



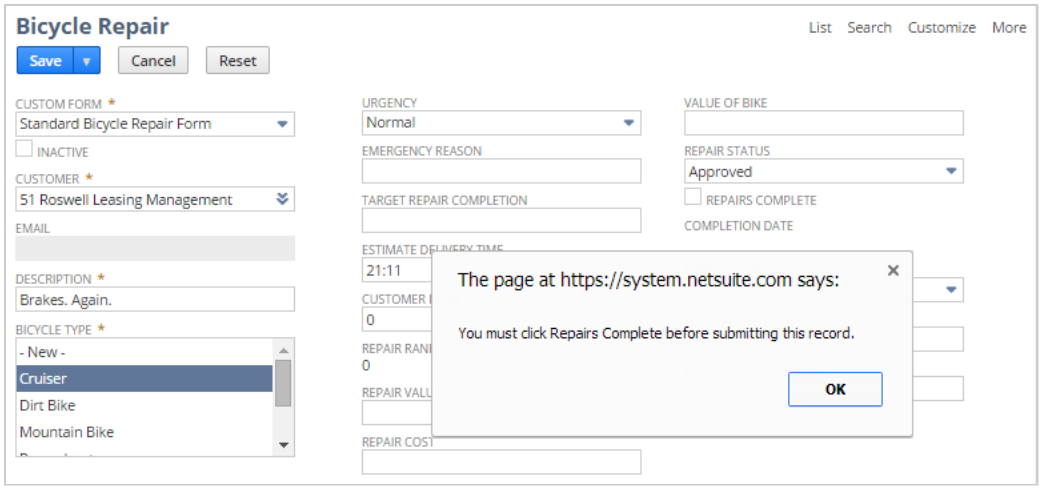
Use this trigger to validate a record form before the Before Record Submit trigger executes. Using this trigger with the Return User Error action, instead of the Before Record Submit trigger, enables a user to return to the form to fix any field value before submitting the form to the NetSuite database. For a list of all the actions that support this trigger, see Workflow Triggers Quick Reference.

Before User Submit Trigger Example

The following screenshot shows a Return User Error action on the Before User Submit trigger that validates that the **Repairs Complete** checkbox is selected before the user saves the record:



If the user clicks **Save** on the record without selecting the **Repairs Complete** checkbox, NetSuite displays the error message. The user clicks **OK** and then selects the checkbox.



Before User Submit Trigger Guidelines

Important: Use the following guidelines when using the Before User Submit trigger.

- The **Before Record Submit** and **Before User Submit** triggers appear to be functionally similar. However, actions that use the **Before Record Submit** trigger run on the server, whereas actions that use the Before User Submit trigger run in the browser.

  For example, a **Return User Error** on a **Before Record Submit** trigger would run on the server. The user would return to the record and all previously entered data would be lost. If a **Return User Error** or **Show Message** action was used on a **Before User Submit** trigger instead, the user clicks **OK** on the message and continues editing the record with no loss of data.

States Reference

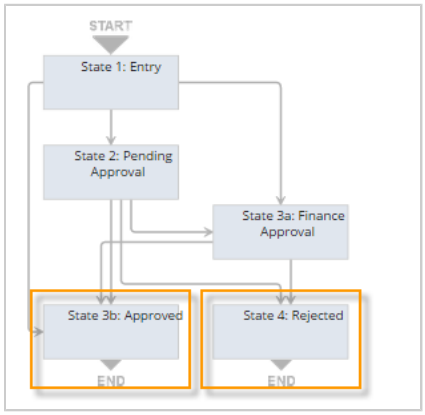
Use the following topics for reference information when working with exit states in a workflow:

- Exit States
- Non-Exiting Workflow States

Exit States

An exit state in a workflow is the final state the record enters before a workflow completes. Depending on the layout of a workflow, a single workflow may have multiple exit states. The diagrammer designates any state without a transition to another state as an **End**, or exit, state.

The following screenshot shows a workflow with two exit states, **State 3b Approved** and **State 4 Rejected**:



The diagrammer removes the **End** state designation when you create a transition from an exit state to another state or you enable the **Do Not Exit Workflow** property on the state.

Trigger Execution in Exit States

NetSuite only executes the actions for the server trigger on which a record entered an exit state and then completes the workflow. Subsequent server triggers do not run.

For example, if a record enters an exit state on a Before Record Load trigger, only actions set to trigger on Entry or Before Record Load run. Then, the record exits the workflow. The Before Record Submit and After Record Submit triggers do not run. For more information about the order of trigger execution in a state, see SuiteFlow Trigger Execution Model.

You can use one of the following methods to control which actions may run in an exit state:

- Enable the **Do Not Exit Workflow** property for the state. Consequently, the record stays in the state and the workflow never completes.
- Create a new state as the exit state. On the transition into the new exit state, set the trigger for the transition to a trigger that allows the actions in the exit state to run. For example, if you have actions that trigger on After Record Submit, make sure the transition into the state uses the Before Record Submit or After Record Submit trigger.

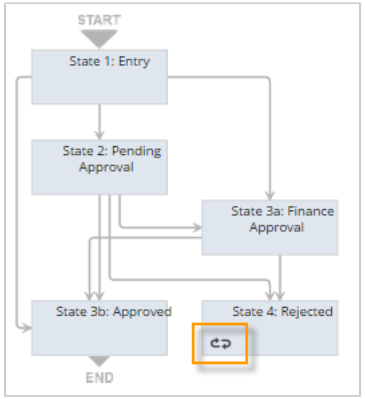
Exit State Guidelines

Important: Use the following guidelines when working with exit states.

Scheduled actions do not run in the exit state. The workflow completes and leaves the exit state before scheduled actions can run. See Scheduling an Action.

Non-Exiting Workflow States

Use non-exiting states to run a workflow indefinitely. You can set a state that has no transitions as a non-exiting state with the **Do Not Exit Workflow** property. The diagrammer shows non-exiting states with a circular arrows icon:



Note: If you create a transition from the state, the **Do Not Exit Workflow** property is unchecked. In addition, the property cannot be set if a state has any transitions.

Use non-exiting states in the following types of workflows:

- Single state workflows. Use the state to run an action or actions any time a record of a specific type is created or edited.
- Approval-based workflows. For example, after a request has been rejected, set the record to enter a non-exiting state with a Lock Record action. If a user or specific group of users accesses the record, the record cannot be edited.

Event Types Reference

The following table lists all event types, the server trigger for which they appear, whether they apply to workflows that initiate **On Create** or **On Update**, and any limitations:

Event Type	Trigger Types (Workflow Initiation)	Limitations
Approve	Before Record Submit (On Update) After Record Submit (On Update)	For the Before Record Submit trigger, only applies to record types such as Sales Orders, Expense Reports, Time Bills, Purchase Orders, and Return Authorizations.
Cancel	Before Record Submit (On Update) After Record Submit (On Update)	—
Copy	Before Record Load (On Update)	—
Create	Before Record Load (On Create) Before Record Submit (On Create) After Record Submit (On Create)	—
Delete	Before Record Submit (On Update)	—
Direct List Edit	Before Record Submit (On Update) After Record Submit (On Update)	**Note:** Only the fields that are updated during the processing of the record display values. Fields that are not updated by XEDIT are blank during the time that the record is processed by the workflow.
Drop Ship	After Record Submit (On Create)	Only applies to Purchase Orders with items specified as **drop ship**.
Edit	Before Record Load (On Update) Before Record Submit (On Update) After Record Submit (On Update)	—
Edit Forecast	Before Record Submit (On Update)	—
Email	Before Record Load (On Update)	—
Mark Complete	Before Record Submit (On Update)	Only applies when users click **Mark Complete** on Task and Phone Call records.

Event Type	Trigger Types (Workflow Initiation)	Limitations
Order Items	After Record Submit (On Create)	Only applies to Purchase Orders with items specified as **drop ship**.
Pack	Before Record Submit (On Update)	Only applies to Item record types, like Item Fulfillment records.
Pay Bills	After Record Submit (On Create)	Only applies to Vendor Payments accessed through the Pay Bill page.
Print	Before Record Load (On Update)	—
Reassign	Before Record Submit (On Update)	Only applies when users click **Grab** on Case records.
Reject	Before Record Submit (On Update)	Only applies to record types such as Sales Orders, Expense Reports, Time Bills, Purchase Orders, and Return Authorizations.
Ship	Before Record Submit (On Update) After Record Submit (On Update)	Only applies to Item record types, like Item Fulfillment records.
Special Order	After Record Submit (On Create)	Only applies to Purchase Orders with items specified as **special order**.
View	Before Record Load (On Update)	—

For sample workflow initiation, action, and transition properties for event types, see Examples of Event Types.

Workflow Templates Reference

Workflow templates create predefined workflows that you can use as a starting point to create customized workflows to define typical or common business processes. Each template includes predefined workflow states, actions, and transitions. You can create a workflow based on a template and then customize it, depending on your business requirements.

For more information about creating a workflow based on a template, see Creating a Workflow from a Workflow Template.

The following tables describes the workflow templates provided by SuiteFlow:

Name	Record Type	For more information, see ...
Journal Entry Basic Approval	Transaction > Journal Entry	Journal Entry Basic Approval Template
Purchase Order Basic Approval	Transaction> Purchase Order	Purchase Order Basic Approval Template
Sales Order Basic Approval	Transaction > Sales Order	Sales Order Basic Approval Template
Lead Nurturing	Lead > Campaign Email	Lead Nurturing Template

Important: For the templates to appear in the Workflow Manager, you must have the proper role to view the record type for the template. In addition, the features associated with the record type must be enabled in your account. For more information, see the topic for the appropriate template type.

Journal Entry Basic Approval Template

The Journal Entry Basic Approval Template creates a workflow for approval of Journal Entry records. After you create a workflow based on this template, you can edit the workflow to customize it according to your business needs. See Creating a Workflow from a Workflow Template.

The Journal Entry Basic Approval workflow implements the following rules:

- The workflow initiates after a user clicks **Save** on a Journal Entry record and before the record is saved to the database.
- The supervisor of a user that creates a journal entry or an administrator can approve the journal entry.
- If a user that creates the journal entry has no supervisor, for example, the user is at the top of the user hierarchy, the user can approve their own journal entry.
- Rejected journal entries can be submitted for approval again.
- The journal entry does not exit the workflow after the journal entry is approved. The record is locked to all users except administrators.

This workflow requires the Require Approvals on Journal Entries preference enabled on the account that creates the Journal Entry record. For more information about this preference, see the help topic Require Approvals on Journal Entries Preference.

Workflow Definition Properties

The following table describes the workflow definition properties for the Journal Entry Basic Approval Template's workflow definition:

Section	Property	Value
Basic Information	Record Type	Transaction
	Sub Types	Journal Entry
	Run As Administrator	checked
	Release Status	Not Initiating
	Keep Instance and History	Only When Testing
	Enable Logging	checked
	Inactive	clear
Event Definition	On Create	checked
	On Update	clear
	Condition	None
	Trigger Type	Before Record Submit

Workflow Fields

The following table describes the workflow fields in the Journal Entry Basic Approval Template's workflow definition:

Workflow Field Name	Description
Approver	Stores the List/Record of the employee that must approve the journal entry.
Created By	Stores the List/Record of the employee that created the journal entry.

States, Actions, and Transitions

The following table describes each state in the Journal Entry Basic Approval Template's workflow definition and the actions and transitions in each state:

State Name	Actions	Transitions
Initiation	▪ Set Field Value. Sets the value of the **Created By** workflow field. ▪ Set Field Value. Sets the value of the **Approver** workflow field. ▪ Set Field Value. Sets the **Approved** field on the journal entry to false.	▪ Transition to the **Pending Approval** state.
Pending Approval	▪ Add Button. Adds the **Approve** button according to the action condition. ▪ Add Button. Adds the **Reject** button according to the action condition. ▪ Remove Button. Removes the **Approve** button included on the standard Journal Entry record form. This workflow only requires the **Approve** button added by the Add Button action above. ▪ Set Field Display Type. Disables the **Approved** field on the record form.	▪ Transition to **Approved** state if the approver clicks **Approve**. ▪ Transition to **Rejected** state if the approver clicks **Reject**.
Approved	▪ Set Field Value. Sets the **Approved** field to true when the record enters the state. ▪ Send Email. Sends an email that the journal entry was approved to the employee record in the **Created By** workflow field, when the record enters the state. ▪ Lock Record. Locks the Journal Entry record if the user accessing the record does not have the Administrator role.	None. The journal entry stays in the **Approved** state of the workflow, locked to all users except administrators.
Rejected	▪ Send Email. Sends an email that the journal entry was rejected to the employee record in the **Created By** workflow field, when the record enters the state. ▪ Add Button. Adds a **Resubmit for Approval** button if the user accessing the record is the employee record in the **Created By** workflow field or if the user is an administrator. ▪ Set Field Display Type. Disables the **Approved** field on the record form.	▪ Transition to the **Initiation** state if the user clicks the **Resubmit for Approval** button.

State Name	Actions	Transitions
	▪ Remove Button. Removes the **Approve** button included on the standard Journal Entry record form. ▪ Lock Record. Locks the Journal Entry record if the user accessing the record is not the user that created the record. Allows the user that created the record to edit the journal entry before resubmitting for approval.	

Purchase Order Basic Approval Template

The Purchase Order Basic Approval Template creates a workflow that allows a user to create and edit a Purchase Order record and send it for approval. After you create a workflow based on this template, you can edit the workflow to customize it according to your business needs. See Creating a Workflow from a Workflow Template.

The Purchase Order Basic Approval workflow implements the following rules:

- The workflow initiates on any creation event on a purchase order.
- The supervisor of a user that creates a purchase order must approve the purchase order. Users with no supervisor cannot send the purchase order for approval.
- After the purchase order is submitted for approval, the purchase order is locked to all users except the supervisor.
- Rejected purchase orders can be submitted for approval again.
- The purchase order does not exit the workflow after the purchase order is approved. The record is locked to all users except administrators.

This workflow requires the following features, preferences, and permissions enabled:

- Purchase Order feature. Go to Setup > Company > Enable Features, and enable **Purchase Orders** under Basic Features on the Transactions subtab. See the help topic Transaction Features.
- Purchase Order Approval Routing. Go to Setup > Accounting > Accounting Preferences, and enable Purchase Orders under Approval Routing on the Approval Routing subtab. See the help topic Approval Routing Accounting Preferences.
- Allow Default Email on Purchase Orders using Suiteflow Approval Routing preference. Go to Setup > Accounting > Accounting Preferences and select **Allow** for the preference under Purchasing on the Order Management subtab. See the help topic Order Management Accounting Preferences.
- Purchase Order Approval permission

Workflow Definition Properties

The following table describes the workflow definition properties for the Purchase Order Basic Approval Template's workflow definition:

Section	Property	Value
Basic Information	Record Type	Transaction
	Sub Types	Purchase Order
	Run As Administrator	checked
	Release Status	Not Initiating

Section	Property	Value
	Keep Instance and History	Only When Testing
	Enable Logging	checked
	Inactive	clear
Event Definition	On Create	checked
	On Update	clear
	Condition	None
	Trigger Type	All

Workflow Fields

The following table describes the workflow fields in the Purchase Order Basic Approval Template's workflow definition:

Workflow Field Name	Description
Created By	Stores the List/Record of the employee that created the purchase order.

States, Actions, and Transitions

The following table describes each state in the Purchase Order Basic Approval Template's workflow definition and the actions and transitions in each state:

State Name	Actions	Transitions
Initiation	▪ Set Field Value. Sets the value of the **Created By** workflow field to the current user. ▪ Set Field Value. Sets the value of the **Approval Status** field on the record form to **Pending Approval**. ▪ Add Button. Adds the **Submit for Approval** button to the record form if the **Created By** workflow field is equal to the current user when the record form loads. ▪ Set Field Display Type. Disables the **Next Approver** field on the record form when the record form loads. ▪ Set Field Display Type. Disables the **Approval Status** field on the record form when the record form loads. ▪ Return User Error. Returns a user error if the current user that created the purchase order does not have a supervisor on the Employee record. ▪ Set Field Value. Sets the value of the **Next Approver** field on the record form to the supervisor of the current user.	▪ Transition to the **Pending Approval** state when the user clicks the **Submit for Approval** button on the record form.
Pending Approval	▪ Set Field Value. Sets the value of the **Approval Status** field on the record form to **Pending Approval**. ▪ Add Button. Adds the **Approve** button according to the action condition. ▪ Add Button. Adds the **Reject** button according to the action condition.	▪ Transition to **Approved** state if the approver clicks **Approve**. ▪ Transition to **Rejected** state if the approver clicks **Reject**.

State Name	Actions	Transitions
	▪ Lock Record. Locks the Purchase Order record.	
Approved	▪ Set Field Value. Sets the **Approval Status** field to **Approved** when the record enters the state. ▪ Send Email. Sends an email that the purchase order was approved to the employee record in the **Created By** workflow field, when the record enters the state. ▪ Lock Record. Locks the Purchase Order record if the user accessing the record does not have the Administrator role.	None. The purchase order stays in the **Approved** state of the workflow, locked to all users except administrators.
Rejected	▪ Set Field Value. Sets the **Approval Status** field to **Rejected** when the record enters the state. ▪ Send Email. Sends an email that the purchase order was rejected to the employee record in the **Created By** workflow field, when the record enters the state. ▪ Add Button. Adds a **Resubmit for Approval** button if the user accessing the record is the employee record in the **Created By** workflow field or if the user is an administrator. ▪ Lock Record. Locks the Purchase Order record if the user accessing the record is not the user that created the record. Allows the user that created the record to edit the purchase order before resubmitting for approval.	▪ Transition to the **Pending Approval** state if the user clicks the **Resubmit for Approval** button.

Sales Order Basic Approval Template

The Sales Order Basic Approval Template creates a workflow that allows a user to create and automatically approve a sales order if the total is less than a specific amount or start the approval process if the total is over a specific amount. After you create a workflow based on this template, you can edit the workflow to customize it according to your business needs. See Creating a Workflow from a Workflow Template.

The Sales Order Basic Approval workflow implements the following rules:

- The workflow initiates on any creation event on a sales order.
- The sales order is automatically approved if the total amount of the sales order is $300 or less and the customer's overdue balance is $0.
- The sales order is also automatically approved if the user that creates the sales order does not have a supervisor.
- If the sales order is not automatically approved, the approval process begins. An approver can edit, approve, reject, or cancel the sales order.
- If the approver rejects the sales order, the user may cancel the sales order, or edit the sales order and resubmit it for approval.
- The sales order does not exit the workflow after the sales order is approved. The record is locked to all users except administrators.

Workflow Definition Properties

The following table describes the workflow definition properties for the Sales Order Basic Approval Template's workflow definition:

Section	Property	Value
Basic Information	Record Type	Transaction
	Sub Types	Sales Order
	Run As Administrator	checked
	Release Status	Not Initiating
	Keep Instance and History	Only When Testing
	Enable Logging	checked
	Inactive	clear
Event Definition	On Create	checked
	On Update	clear
	Condition	None
	Trigger Type	All

Workflow Fields

The following table describes the workflow fields in the Sales Order Basic Approval Template's workflow definition:

Workflow Field Name	Description
Approver	Stores the List/Record of the employee that must approve the sales order.
Created By	Stores the List/Record of the employee that created the sales order.

States, Actions, and Transitions

The following table describes each state in the Sales Order Basic Approval Template's workflow definition and the actions and transitions in each state:

State Name	Actions	Transitions
Initiation	▪ Set Field Value. Sets the value of the **Created By** workflow field. ▪ Set Field Value. Sets the value of the **Order Status** field on the record form to **Pending Approval**.	▪ Transition to the **Approved** state if the user does not have a supervisor, or the **Total** field is less than $300.00 and the **Overdue Balance** for the customer is $0. ▪ Transition to the **Pending Approval** state.
Pending Approval	▪ Set Field Value. If the **Approver** workflow field is empty, set it to the current user's supervisor. ▪ Set Field Value. Appends the value of the **Memo** field on the record form to the system date and the text "Pending Approval...". ▪ Send Email. Sends an email to the supervisor to notify of a pending sales order.	▪ Transition to **Approved** state if the approver clicks **Approve**. ▪ Transition to **Rejected** state if the approver clicks **Reject**. ▪ Transition to the **Canceled** state if the **Order Status** field has a value of **Canceled**.

State Name	Actions	Transitions
	▪ Lock Record. Locks the Sales Order record if the current user is not the approver. ▪ Add Button. Adds the **Approve** button if the current user is the approver. ▪ Add Button. Adds the **Reject** button if the current user is the approver. ▪ Remove Button. Removes the standard **Approve** button with an id of APPROVE. ▪ Remove Button. Removes the standard **Create Deposit** button with an id of CREATEDEPOSIT. ▪ Remove Button. Removes the standard **Manage Revenue Recognition** button with an id of UPDATEREVREC.	
Approved	▪ Set Field Value. Sets the **Order Status** field to **Pending Fulfillment** when the record enters the state. ▪ Set Field Value. Appends the value of the **Memo** field on the record form to the system date and the text "Approved...". ▪ Lock Record. Locks the Sales Order record if the user accessing the record does not have the Administrator role.	None. The sales order stays in the **Approved** state of the workflow, locked to all users except administrators.
Rejected	▪ Set Field Value. Appends the value of the **Memo** field on the record form to the system date and the text "Rejected...". ▪ Send Email. Sends an email that the sales order was rejected to the employee record in the **Created By** workflow field, when the record enters the state. ▪ Lock Record. Locks the Sales Order record if the user accessing the record is the employee record in the **Created By** workflow field or if the user is an administrator. Allows the user that created the record to edit the sales order before resubmitting for approval. ▪ Add Button. Adds a **Resubmit for Approval** button if the current user is the user that created the record or if the current user is an administrator. ▪ Remove Button. Removes the standard **Approve** button with an id of APPROVE. ▪ Remove Button. Removes the standard **Create Deposit** button with an id of CREATEDEPOSIT. ▪ Remove Button. Removes the standard **Manage Revenue Recognition** button with an id of UPDATEREVREC.	▪ Transition to the **Pending Approval** state if the user clicks the **Resubmit for Approval** button. ▪ Transition to the **Canceled** state if the **Order Status** field has a value of **Canceled**.

Lead Nurturing Template

The Lead Nurturing Template creates a workflow for lead nurturing campaigns. After you create a workflow based on this template, you can edit the workflow to customize it according to your business needs. See Creating a Workflow from a Workflow Template.

The template requires you to specify a campaign email address to be used as the return address for emails sent by workflows based on this template. Additionally, if you have the Subscription Categories

feature enabled, you must specify a subscription category for the template. Marketing is selected by default.

The Lead Nurturing Template implements the following rules:

- The workflow initiates on any create event on a lead record.
- If the lead record's status is changed to Closed Won during the workflow, the record transitions to Exit after the Webinar Invitation and Email Case Study steps.

Several permissions are required to use this template:

- Lists:
  - Marketing Campaigns
  - Marketing Templates
  - Customers
- Setup:

  Set Up Campaign Email Addresses

Workflow Definition Properties

The following table describes the workflow definition properties for the Lead Nurturing Template's workflow definition:

Section	Property	Value
Basic Information	Record Type	Customer
	Sub Types	Lead
	Run As Administrator	unchecked
	Release Status	Not Initiating
	Keep Instance and History	Only When Testing
	Enable Logging	checked
	Inactive	clear
Event Definition	On Create	checked
	On View or Update	clear
	Condition	None
	Trigger Type	After Record Submit

Workflow Fields

The following table describes the workflow fields in the Lead Nurturing Template's workflow definition:

Workflow Field Name	Description
Webinar.Response	Stores the lead's response to the webinar invitation email.
CaseStudy.Response	Stores the lead's response to the case study email.

States, Actions, and Transitions

The following table describes each state in the Lead Nurturing Template's workflow definition and the actions and transitions in each state:

State Name	Actions	Transitions
Webinar Invitation	▪ Send Campaign Email. Sends an email to the lead record with an invitation to the webinar when the record enters the state. This invitation includes a link to an online registration form. ▪ Subscribe To Record. If the lead clicks a link in the email, the campaign email response record is updated which triggers the workflow to transition to the next state.	▪ Transitions to **Wait 1 Day** if the lead clicks a link in the webinar invitation. ▪ Transitions to **Industry Comparison** if the lead does not click a link in the webinar invitation within 14 days. ▪ Transitions to **Exit** if the lead's record is converted to be a customer during the workflow.
Industry Comparison	▪ Send Campaign Email. Sends an email to the lead record containing industry comparison information when the record enters the state.	None. The lead exits the workflow at this state.
Wait 1 Day	None. The state includes a 1–day delay before transitioning to **Email Case Study**.	▪ Transitions to **Email Case Study** after 1 day.
Email Case Study	▪ Send Campaign Email. Sends an email to the lead record with a link to a case study when the record enters the state. ▪ Subscribe To Record. If the lead clicks a link in the email, the campaign email response record is updated which triggers the workflow to transition to the next state.	▪ Transitions to **Wait 3 Days** if the lead clicks a link in the case study. ▪ Transitions to **Free Trial Offer** if the lead does not click a link in the case study in 7 days. ▪ Transitions to **Exit** if the lead's record is converted to a customer during the workflow.
Free Trial Offer	▪ Send Campaign Email. Sends an email to the lead record with a free trial offer when the record enters the state.	None. The lead exits the workflow at this state.
Wait 3 Days	None. The state includes a 3–day delay before transitioning to **Customer Testimonial.**	▪ Transitions to **Customer Testimonial** after 3 days.
Customer Testimonial	▪ Send Campaign Email. Sends an email to the lead record with a customer testimonial when the record enters the state.	▪ Transitions to **Exit** to complete the workflow.
Exit	None. The record completes the workflow in this state.	None. The record completes the workflow in this state.

Action Examples

The following table shows the examples of actions that you can use when developing workflows:

Action Type	Example
Add Button	Using Buttons to Run Transitions Using Buttons for Navigation

Action Type	Example
Send Email	Executing an Action with a Saved Search Condition
Set Field Value Return User Error	Using Conditional Fields with Actions
Create Record Go To Record Transform Record	Setting Field Values in Action Definitions
Create Record Subscribe To Record	Creating and Subscribing to a Record

Using Buttons to Run Transitions

You can use a button to run a transition in a workflow instead of a server trigger. Use the Add Button action to add a button to a state and create a transition that executes on the button click and moves the record to the next state in the workflow.

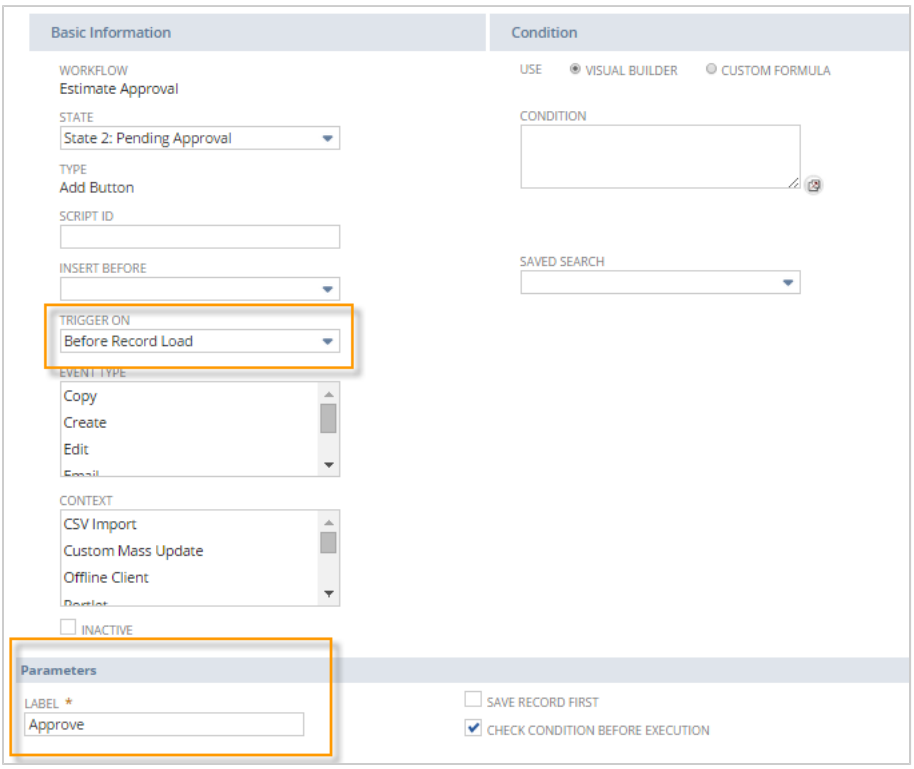
For example, add **Approve** and **Reject** buttons to approve or reject a purchase approval. The **Approve** button transitions the record to an Approved state and the **Reject** button transitions the record to a Rejected state.

Use the following example to create an **Approve** button and a transition from **State 2 Pending Approval** to **State 3 Approved**.

To add a button and use the button to initiate a transition:

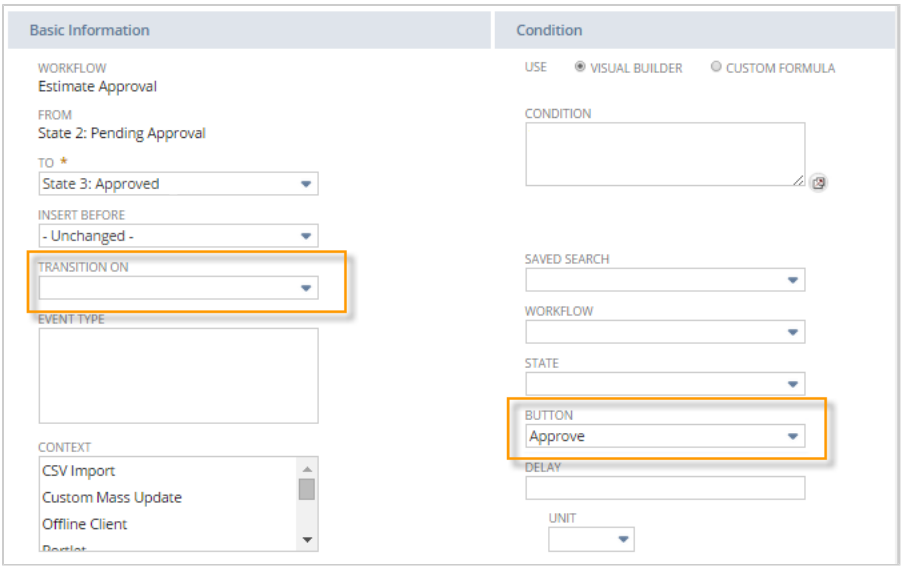
1. Open a workflow and select the state that you want to transition from in the diagrammer.

   For example, choose **State 2 Pending Approval**.
2. In the context panel, click **New Action**.
3. In the **New Action** window, click **Add Button**.
4. Make sure **Before Record Load** is selected for **Trigger On** and enter a button label in the **Label** field under **Parameters**. For other Add Button action properties, see Add Button Action Parameters.



5. Click **Save**.
6. In the diagrammer, hover over the bottom of the state that you want to transition from. The cursor becomes a filled half-circle.

   Drag the icon to the state to which you want to transition and release the mouse to create the transition.
7. Select the transition in the diagrammer and click the **Edit** icon on the **Transition** tab in the context panel.
8. In the **Workflow Transition** window, leave the **Trigger On** field blank and choose the button you created in the **Button** dropdown list.



9. Click **Save**.

In the above example, when the record enters **State 2: Pending Approval**, an **Approve** button appears on the record form. Clicking the button transitions the record to **State 3: Approved**. Add a Set Field Value action in State 3 to set the approval status of the record to approved.

> **Note:** SuiteFlow prevents workflow instances and actions from processing simultaneously when workflow buttons are clicked multiple times. See, Add Button Action Guidelines.

Using Buttons for Navigation

To use a button for navigation, use a button to transition from a first state to a second state that contains a Go To Page or Go To Record action. The Go To Page or Go To Record action redirects the user from the current record in the workflow to another page, list, or record. The destination depends on the type of action used in the second state.

Use the following example to create a workflow with two states, **State 1** and **State 2**. A transition in **State 1** executes and transitions to **State 2** from a button added with the Add Button action. A Go To Record action in **State 2** redirects the user to a new Customer Deposit record.

To create and use a button for navigation:

1. Create a workflow with the following properties:

Property	Value
Record Type	Transaction
Sub Types	Sales Order
Initiation	Event Based
On Create	checked
On Update	checked
Trigger Type	Before Record Load

For more information, see Creating a Workflow.

> **Note:** Use the Before Record Load trigger because of the Add Button action to add a button in this state. See Before Record Load Trigger and Add Button Action.

2. Save the workflow definition.
3. In the diagrammer, click **New State** twice to create two states: **State 1** and **State 2**.
4. Select **State 1** in the diagrammer, click **New Action** in the context panel, and create an action with the following properties:

Property	Value
New Action window	Add Button
Trigger On	Before Record Load
Label (under **Parameters**)	Create Deposit

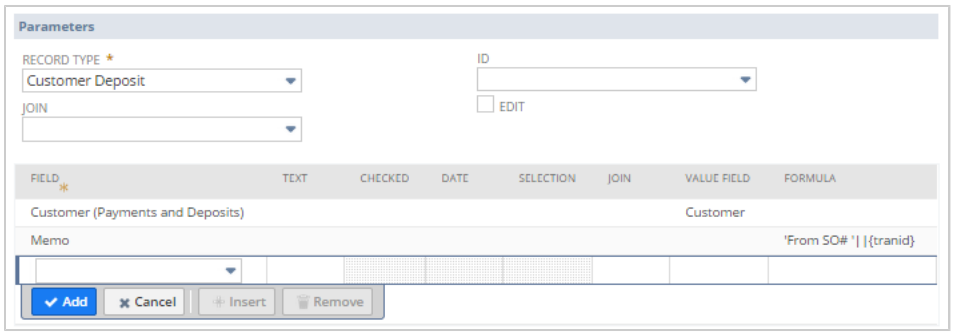
5. Click **Save**.
6. Select **State 2** in the diagrammer, click **New Action** in the context panel, and create an action with the following properties:

Property	Value
New Action window	Go To Record
Trigger On	Entry
Record Type (under **Parameters**)	Customer Deposit

> **Note:** Since the Customer Deposit record does not yet exist, the Go To Record action creates it. See Go To Record Action.

7. On the Go To Record action, under **Parameters**, enter each of the following fields and click **Add**:

Field	Value Field
Customer (Payments and Deposits)	Customer
Memo	'From SO# '||{tranid}



8. Click **Save**.
9. In the diagrammer, hover over the bottom of the **State 1**. The cursor becomes a filled half-circle.

   Drag the icon to **State 2** and release the mouse to create the transition.
10. Select the transition in the diagrammer and click the **Edit** icon on the **Transition** tab in the context panel.
11. In the **Workflow Transition** window, leave the **Trigger On** field blank and choose **Create Deposit** in the **Button** dropdown list. Click **Save**.

To test this workflow, create and save a new sales order. On the sales order, click the **Create Deposit** button to create a deposit record associated with the customer for the sales order. NetSuite creates the deposit record and redirects the user to the new record.

Executing an Action with a Saved Search Condition

You can use a saved search on an action as a condition. The action does not run unless the record in the workflow is returned by the saved search. When the trigger for the action executes, NetSuite runs the saved search and executes the action if the record is returned in the search. Unlike the behavior for scheduled actions, NetSuite runs the saved search immediately.

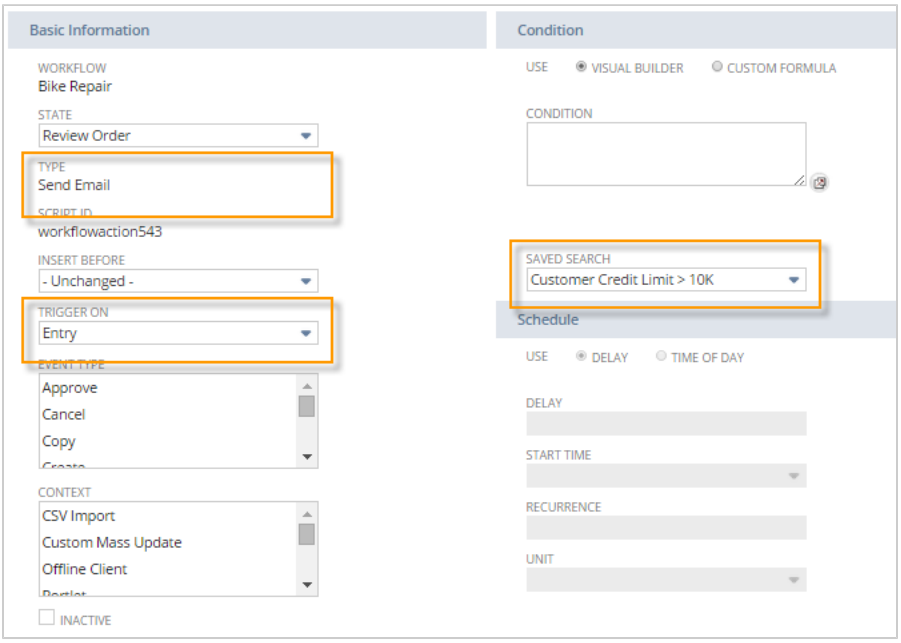
The following example shows how to run a Send Email action in a state if the customer credit limit is greater than $10,000. You can use a similar method for other actions.

To use a saved search as a condition on an action:

1. Create a saved search for Customer records with a credit limit of more than $10,000. See the help topic Defining a Saved Search.

> **Note:** The record type for the saved search must be the same as the base record type in the workflow definition.

2. Create an action and select the saved search in the **Saved Search** dropdown list for the action. In this example, the saved search is **Customer Credit Limit > 10k**:



In this example, when the record enters the state, the Send Email action executes if the customer associated with the record has a credit limit over $10,000.

> **Important:** Use a server trigger with an action with a saved search as a condition. NetSuite ignores the saved search if the action executes on a client trigger.

Using Conditional Fields with Actions

As a user interacts with a record form, the user makes changes to the fields on the record. NetSuite can detect when a user makes a change to a specific record field. You can direct the workflow to dynamically perform other actions based on when the field changes and the associated field value.

Use client triggers on a record form to detect the events that occur when a user interacts with the form. Use the **Client Fields** multi-select box to detect which field or fields changed during the record form events. For example, you can direct an action to populate the **Sales Rep Phone** after a user edits the **Sales Rep Name** field.

You can use the following action types on the following client triggers:

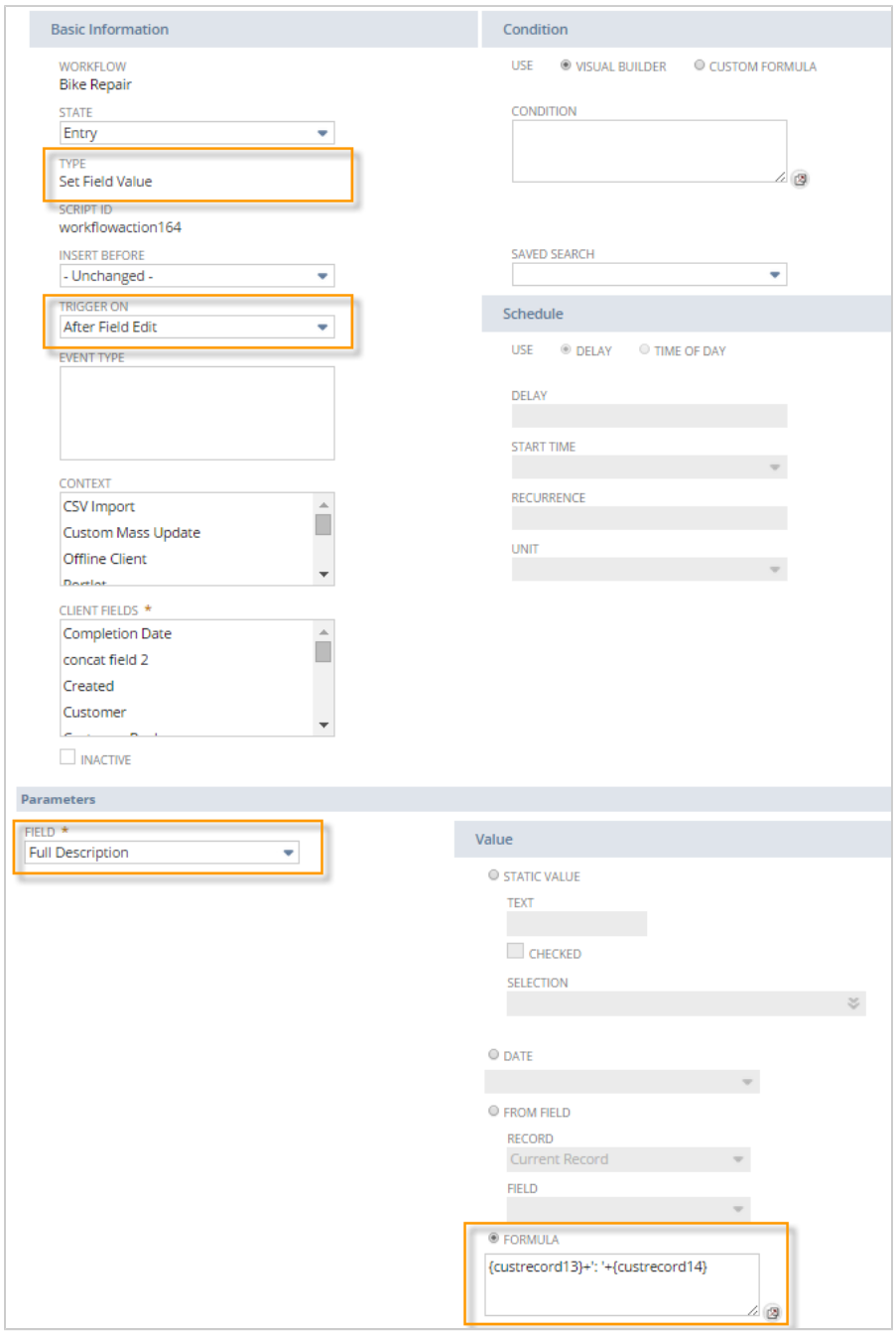
Action Name	Available Triggers
Return User Error Action	Before User Edit, Before Field Edit, After Field Edit, After Field Sourcing, Before User Submit

Action Name	Available Triggers
Set Field Display Label Action	Before User Edit, Before Field Edit, After Field Edit, After Field Sourcing
Set Field Display Type Action	Before User Edit, Before Field Edit, After Field Edit, After Field Sourcing
Set Field Required Action	Before User Edit, Before Field Edit, After Field Edit, After Field Sourcing
Set Field Value Action	Before User Edit, Before Field Edit, After Field Edit, After Field Sourcing, Before User Submit
Show Message Action	Before User Edit, Before Field Edit, After Field Edit, After Field Sourcing, Before User Submit

Dynamic Set Field Value Example

The following example shows a Set Field Value action that executes on the After Field Edit trigger. After a user edits either the **Description** or **Emergency Reason** fields, the action executes. The action concatenates the value of the two fields and populates the **Full Description** field.

You can use a similar solution with client-side actions, like the Set Field Required and Set Field Display Type actions.

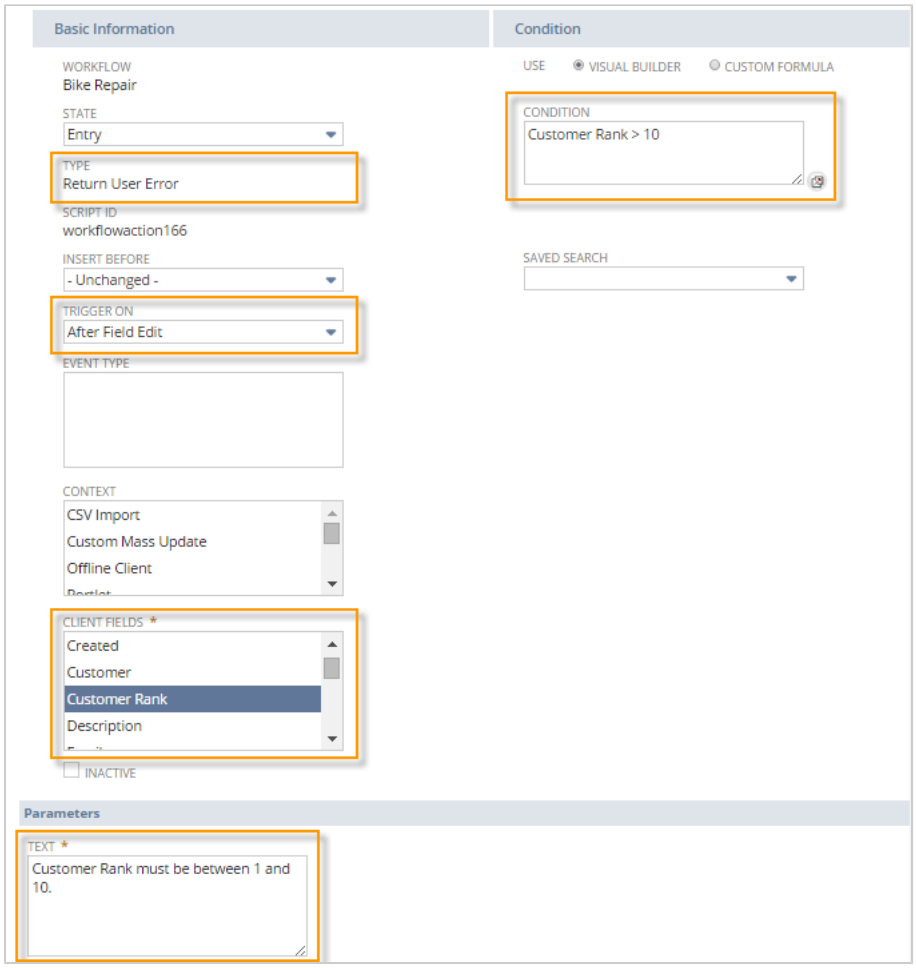


Note: You can reference the internal NetSuite ID of field in formulas. For more information about getting the internal NetSuite ID of fields, see Using Internal IDs in an Email.

Dynamic Return User Error Example

The following example shows a Return User Error action that executes on the After Field Edit trigger and uses a condition. After a user edits the **Customer Rank** field, the action executes. The action returns an error if the **Customer Rank** field is greater than 10. NetSuite returns the focus to the **Customer Rank** field and the user cannot proceed further without fixing the rank.

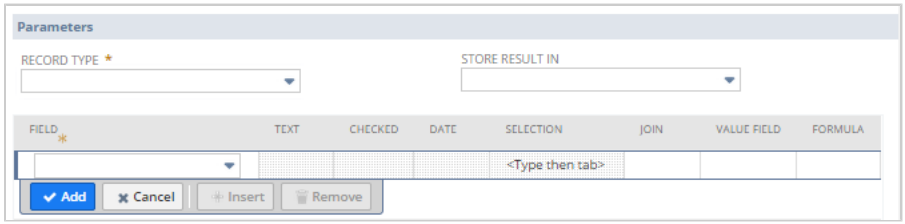
You can use a similar solution with other client-side actions, like the Show Message action, except that Show Message does not prevent the user from continuing. See Return User Error Action, Show Message Action, or After Field Edit Trigger.



Setting Field Values in Action Definitions

When you create a Create Record, Go To Record, or Transform Record action, you can set field values on the target record. You specify the type of record in the **Record Type** dropdown list and then set the field values. You can use the field values from the current record in the workflow or a record that can be joined with the current record. For more information about these action types, see Create Record Action, Go To Record Action, and Transform Record Action.

The following screenshot shows the **Parameters** section for the Create Record action:



The following table lists the columns used by these actions:

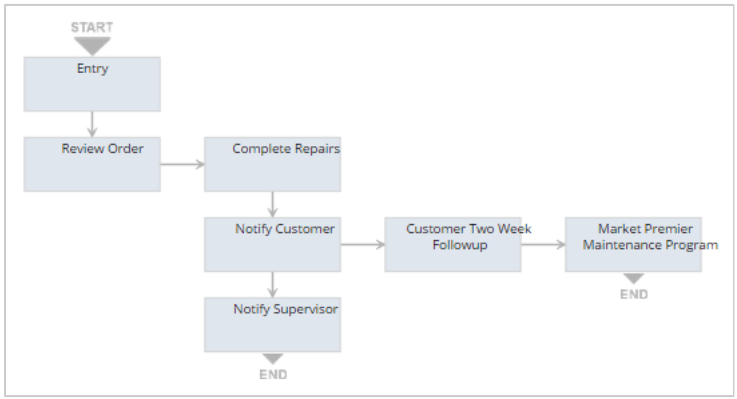
Column	Description
Field	Name of the field for the target record. Select the field name and set the value in the subsequent columns. For more information about the difference between UI field names and field names in target record types, see FAQ: SuiteFlow.
Text	Static text value if the field type for the **Field** column is a text field.
Checked	If the field type for the **Field** column is a checkbox, set the checkbox to checked.
Date	Date value if the field type for the **Field** column is a Date field.
Selection	If the field type for the **Field** column is a List/Record, value for the List/Record. Type and press Tab to specify a value or click in the box and click the double arrows and select **List**.
Join	List/Record field to join with the current record.
Value Field	Field that contains the value for the field type in the **Join** column.
Formula	Formula that specifies the value for the field type in the **Field** or **Join** columns. Click to open the Formula Builder or enter a value. See the help topic Creating Formula Fields.

Creating and Subscribing to a Record

You can use the Create Record and Subscribe To Record actions to create a record, track the created record, and run actions and conditions based on the status of the created record. You use a workflow field or state field to reference the created record.

The following example shows how to create a Phone Call record in a workflow for a Bike Repair record, subscribe to the record, and then transition the record in the workflow when the Phone Call record completes.

The following screenshot shows the states and transitions in the workflow:



This example shows how to create and subscribe to a Phone Call record in the **Review Order** state and run a transition between the **Notify Customer** and **Notify Supervisor** states when the phone call completes.

Use the following basic process to use the Create Record and Subscribe To Record actions together:

1. Create a workflow field. The field is accessible to each state in the workflow. See Step 1 Create the Workflow Field.
2. Use the Create Record action to create a new Phone Call record. See Step 2 Create the Create Record Action.
3. Use the Subscribe To Record action to track the Phone Call record. See Step 3 Create the Subscribe To Record Action.
4. Create a transition that executes when the Phone Call record completes. See Step 4 Create the Conditional Transition.

After you complete the above steps and create the record to initiate the workflow, the Phone Call record is created and the transition executes when the Phone Call record is marked as complete.

Guidelines for Creating and Subscribing to a Record

- You can also use a state field, but all of the actions and any other actions or transitions based on the status of the tracked record must complete in the same state before the record transitions to another state. State fields are accessible from a single state only.
- The Create Record action must appear before the Subscribe To Record action on the **Actions** subtab on the **Workflow State** window.
- You must select a server trigger for both the Create Record and Subscribe To Record action. In general, you should use the same trigger for both actions.

  If you use different triggers for each actions, make sure that the trigger for the Create Record executes before the trigger for the Subscribe To Record action. For example, use the Before Record Submit trigger for the Create Record action and the After Record Submit trigger for the Subscribe To Record action. In addition, make sure both triggers will run before any transition occurs. For more information, see SuiteFlow Trigger Execution Model.

  This example uses the Exit trigger for both actions, to make sure that they both only run one time, when the record transitions to a different state.

Step 1 Create the Workflow Field

Use a workflow field to store a reference to the record created with the Create Record action. In this example, the workflow field stores a reference to a Phone Call record. You must specify the type when you create the workflow field. For more information about this example, see Creating and Subscribing to a Record.

To create a workflow field to store a Phone Call record reference:

1. Open a workflow.
2. In the context panel, click the **Workflow** tab, click the **Fields** view, and then click **New Workflow Field**.
3. Enter the following properties:

Property	Value
Label	bikerepair.phonecall
Type	List/Record
List/Record	Call

4. Click **Save.**

Step 2 Create the Create Record Action

Use the Create Record action to create a new record. The record type you create does not need to be the same type as the record in the workflow. In this example, use the Create Record action to create a Phone Call record in the **Review Order** state. For more information about this example, see Creating and Subscribing to a Record.

To create a Phone Call with the Create Record action:

1. If you have not already done so, create the workflow field. See Step 1 Create the Workflow Field.
2. In the diagrammer, select the state, click **New Action** in the context panel, and click **Create Record**.
3. In the **Workflow Action** window, select **Exit** for the **Trigger On** property.

   The action executes when the record leaves the **Review Order** state.
4. In the **Parameters** section, enter the following properties:

Property	Value
Record Type	Phone Call
Store Result In	bikerepair.phonecall (Workflow)

5. In the **Parameters** section, enter each of the following properties and click **Add**:

Field Column	Value Column	Value	Explanation
Title	Text	New bike request to confirm	The title of the Phone Call record.
Assigned	Value Field	Owner	Dynamically set the **Assigned** field of the Phone Call record to the user that creates the Bike Repair record in the workflow.
Message	Text	Please contact the following customer	Tell the assignee of the Phone Call record to phone the customer.
Company	Value Field	Customer	Dynamically set the **Company** field on the Phone Call record to the customer for the Bike Repair record.

6. Click **Save**.

Step 3 Create the Subscribe To Record Action

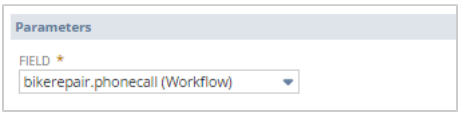
Use the Subscribe To Record action to track a record created in a workflow with the Create Record action. Create the action and choose the instance or state field that stores the reference to the created record. In this example, create a Subscribe To Record action in the **Review Order** state to subscribe to the Phone Call record. For more information about this example, see Creating and Subscribing to a Record.

To create the Subscribe To Record:

1. If you have not already done so, create the Create Record action. See Step 2 Create the Create Record Action.
2. In the diagrammer, select the state, click **New Action** in the context panel, and click **Subscribe To Record**.
3. In the **Workflow Action** window, select **Exit** for the **Trigger On** property.

   The action executes when the record leaves the **Review Order** state.

4. In the **Parameters** section, select the workflow field **bikerepair.phonecall (Workflow)** for the **Field** property:



5. Click **Save**.

Step 4 Create the Conditional Transition

Use a condition on a transition to specify that the transition executes when a record changes status. In this example, create a transition between the **Notify Customer** and **Notify Supervisor** states that executes when the phone call completes. For more information about this example, see Creating and Subscribing to a Record.

To create a conditional transition:

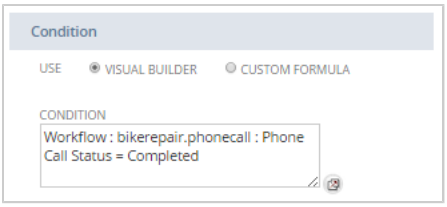
1. If you have not already done so, create the Subscribe To Record action. See Step 3 Create the Subscribe To Record Action.
2. In the diagrammer, hover over the bottom of the state where you want the transition to start. The cursor becomes a filled half-circle.

   Drag the icon to the target state and release the mouse to create the transition.
3. In the diagrammer, select the transition and click the **Edit** icon on the **Transition** tab in the context panel.
4. In the **Workflow Transition** window, in the **Condition** section, open the Condition Builder and create the following condition:

Column	Value
Record	bikerepair.phonecall (Workflow)
Field	Phone Call Status
Compare Type	any of
Selection	Completed

   For more information about creating a condition, see Defining a Condition with the Condition Builder.

   This condition states that when the Phone Call record created by the workflow changes status to Completed, the transition between the two states:



> **Note:** This type of transition does not require a trigger. NetSuite automatically checks for the status of the Phone Call and executes the transition when the condition evaluates to true.

5. Click **Save**.

The setup for the transition and the related condition is now complete. You can use a similar process to implement the functionality in a workflow for other created record types. To return to the example, see Creating and Subscribing to a Record.

Transitions Examples

The following table lists the provided examples for working with transitions in a workflow:

Transition Type	More Information
Transitioning with a blank trigger type	Blank Transition Trigger
Executing a transition with a saved search condition	Executing a Transition with a Saved Search Condition
Transitioning on a completed state in a child workflow	Specifying States for Child Workflow Transitions

Blank Transition Trigger

The trigger type for the **Trigger On** property of a transition determines when the transition executes.

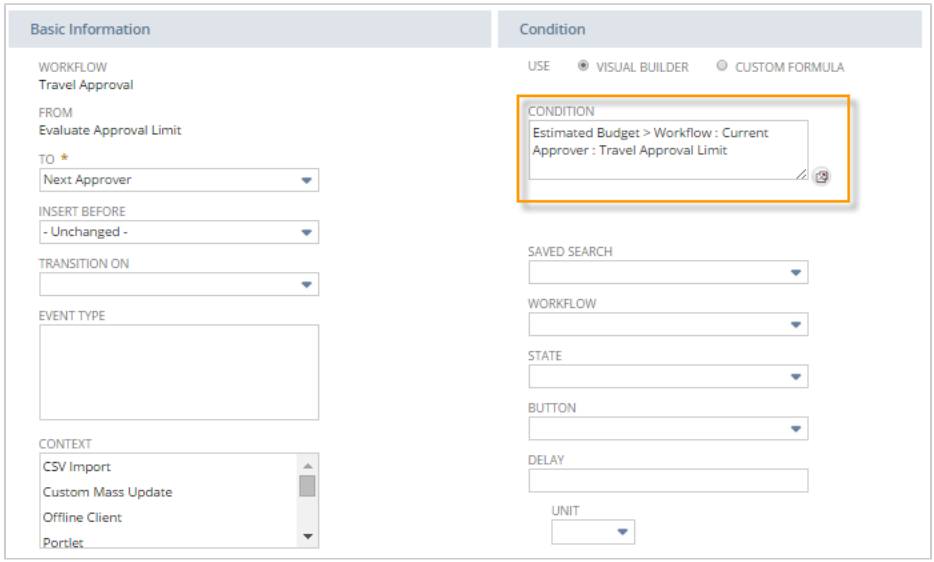
Leave the transition trigger blank in the following situations:

- You want to use a button to transition to another state. See Using Buttons to Run Transitions.
- You want a child workflow or child workflow state to complete before the transition executes. See Specifying States for Child Workflow Transitions.
- You want the transition to run immediately, based on a condition or the results of a saved search.

Blank Transition Trigger Example

You can leave the **Trigger On** property of a transition blank if you want a transition to only run if specific condition evaluates to true, and not on any specific server trigger.

In the following transition, if the estimated cost of a travel request exceeds the amount that the current approver is allowed, the record transitions from the **Evaluate Approval Limit** state to the **Next Approver** state. With a blank transition trigger, NetSuite evaluates the condition and executes the transition accordingly.



Note: The **Evaluate Approval Limit** state also includes another transition in case the amount of the travel request can be approved by the **Current Approver**.

Executing a Transition with a Saved Search Condition

You can use a saved search as a condition for running a transition. The transition runs if the current record in the workflow is returned by the saved search. Use this type of transition, for example, if you want to transition based on data that is not directly available to the workflow, like data on a sublist.

Note: To appear in the **Saved Search** dropdown list in the transition properties, the saved search record type must be the same as the base record type for the workflow.

To create a transition based on the results of a saved search:

1. Create a saved search on the base record type for the workflow definition. See the help topic Defining a Saved Search.
2. Create a transition between two states in a workflow. See Creating a Transition.

   The behavior of the transition depends on the value of the **Trigger On** property for the transition:

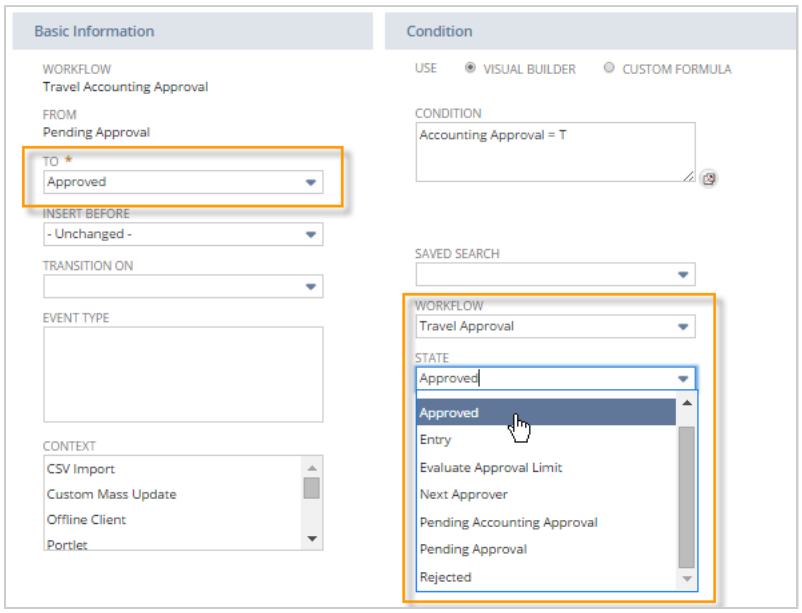
Trigger On Property	Transition Behavior
Blank	Transition executes if the processed record is returned in the saved search results.
Scheduled	Transition executes after the value of the **Delay** property is reached and if the record in the workflow is returned by the saved search.
Entry, Before Record Load, Before Record Submit, After Record Submit	Transition executes on the specific trigger, if the record in the workflow is returned by the saved search.

3. Save the transition.

Specifying States for Child Workflow Transitions

You can use the completion of a child workflow or the completion of a state in a child workflow as a condition for a transition. For example, if a child workflow completes on an **Approved** state, you can direct the child workflow to transition to another state in the parent workflow.

The following screenshot shows the **Workflow Transition** window for a child workflow. The values in the Workflow and State dropdown lists refer to the parent workflow and states in the parent workflow, respectively. When the child workflow leaves the **Approved** state, it transitions to a state in the parent workflow.



Note: If no state in selected in the parent workflow, the child workflow transitions back to the parent workflow on any completion of any end state in the child workflow.

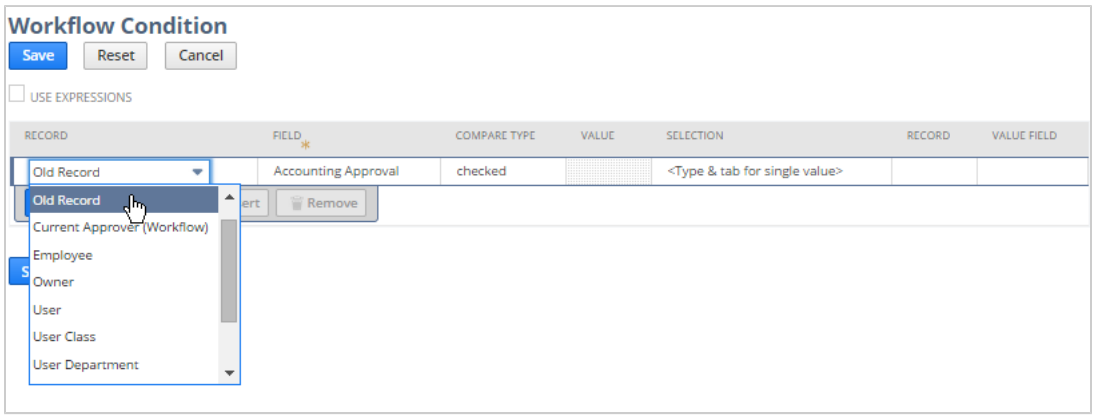
Condition Examples

The following table lists the provided examples for working with conditions in a workflow:

Condition Type	More Information
Using the **Old Record** property in the Condition Builder	Referencing Old Record Values in a Workflow
Conditions on a credit hold field for a Customer record	Defining Conditions for Customer Credit Hold Field

Referencing Old Record Values in a Workflow

Even when a workflow changes a record's values, it's possible to create workflow initiation, action, or transition conditions that reference record values before the changes occurred. The record's original values are retrieved before the first Before Submit event executes. These values can then be used in Before Submit and After Submit workflow, action, and transition conditions. To do this, use the **Old Record** option in **Record** field when defining a condition using the Condition Builder. For more information, see Defining a Condition with the Condition Builder.



Old Record Guidelines

Use the following guidelines when using Old Record values for a record.

- Use this feature only when necessary. Referencing Old Record values reduces workflow performance because the workflow needs to load the old record from the database.
- Use a Before Record Submit or After Record Submit trigger when referencing pre-edit values.
- Use a Before Record Submit or After Record Submit trigger when referencing Old Record values.
- If you want to reference a field of the old record in a condition represented by a formula, the placeholder old needs be used. For example, Old Record:Priority (Task/Call) = High would be represented as `{old.priority.id}='HIGH'`.

Example of Reacting to a Change in a Field

A common use case for referencing old values in a workflow is reacting to a change in a field on a record. In this situation, you would create a condition similar to Old Record.Some Field != Some Field.

For example, consider a task record that is running an approval workflow. To expedite the approval, a user can set the **Priority** field to High and the workflow can be configured to react to this field's value. To notify the approver, we can use the Old record option and send an email to the approver only when the Priority is raised to High or set to High when the task record was created. To do this, you create a Send Email action with a condition using the Priority field.

To create the example Send Email action:

1. Select an existing workflow flow state or add a new workflow state to the workflow.
2. Click **New Action** in the Context Panel.
3. Click **Send Email**.
4. Set the following action properties:
   - **Trigger On** – After Record Submit
   - **Condition:**
     - **Custom Formula** – Selected
     - **Condition** – `{old.priority.id} != {priority.id} and {priority.id} = 'HIGH'`
   - **Sender:**

    - **Specific Sender** – Selected
    - **Sender** – Specify a sender
  - **Recipient**
    - **From Field** – Selected
    - **Record (Join Field)** – Current Record
    - **Field** – Assigned
  - **Content**
    - **Custom** – Selected
    - **Subject** – Your task has been escalated!
    - **Body** – Your task '`{title}`' has been escalated to High priority!
5. Click **Save**.

> **Note:** It is also possible to create the condition's formula using the **Visual Builder**. In this example, the formula would be `Old Record : Priority (Task/Call) != Priority (Task/Call) And Priority (Task/Call) = High`.

Defining Conditions for Customer Credit Hold Field

You can define a workflow condition based on whether customers have credit holds placed on their accounts. The **Hold** field on the **Financial** subtab of a Customer record indicates the hold status. The methods to define the condition depend on whether the condition executes on a client or server trigger.

Client Trigger

For actions that run on a client trigger, use the Condition Builder to create the following condition:

```
nlapiLookupField('customer',nvl(nullIfEmpty(nlapiGetFieldValue('entity')),-1),'credithold',false)=='ON'
```

Server Trigger

The **Hold** field does not directly exist in the NetSuite database. Instead, it is a combination of two fields: **creditholdoverride** and **manualcredithold**. The following table shows how NetSuite generates the value of the **Hold** field:

Hold Field Value	creditholdoverride Value	manualcredithold Value
Auto	F	F
On	F	T
Off	T	F

For conditions on workflow initiation, actions, and transitions, use the following formula with the mapping from the previous table for the condition. For example, to check that the **Hold** field is **On**:

```
{company.creditholdoverride}='F' and {company.manualcredithold}='T'
```

Context Type Examples

Use the following examples for sample workflow definition settings that initiate a workflow instance or run actions and transitions for a specific context type.

CSV Import

Use the following sample settings to initiate a workflow and run actions and transitions for a sales order submitted by CSV import:

Task Type	Description	Settings
Workflow initiation	Initiate workflow instance on new sales orders submitted by CSV import.	**Trigger On:** After Record Submit **On Create:** checked **On Update:** unchecked **Contexts:** CSV Import
Action, Transition	Action or transition executes if sales order submitted by CSV import.	**Trigger On:** After Record Submit **Contexts:** CSV Import

User Event Script

Important: The User Event script context only works with NetSuite server user events such as email

Use the following sample settings to initiate a workflow and run actions and transitions for a sales order created with the following user event script:

```
/**
* @NAPIVersion 2.0
* @NScriptType UserEventScript
*/
define(["N/record"], function (record) {
    function createSalesOrd() {
        var salesOrd = record.create({ type: record.Type.SALES_ORDER, isDynamic: true });
        salesOrd.setValue({ fieldId: 'entity', value: 185 });
        salesOrd.setValue({ fieldId: 'memo', value: 'created through user event' });
        salesOrd.selectNewLine({ sublistId: 'item' });
        salesOrd.setCurrentSublistValue({ sublistId: 'item', fieldId: 'item', value: 42 });
        salesOrd.commitLine({ sublistId: 'item' });
        salesOrd.save();
    }

    return {
        afterSubmit: createSalesOrd
    };
});
```

Task Type	Description	Settings
Workflow initiation	Initiate a workflow instance on new sales orders created with a user event script.	**Trigger On:** After Record Submit **On Create:** checked

Task Type	Description	Settings
		On Update: unchecked **Context Type:** User Event Script
Action, Transition	Action or transition executes on a sales order created with a user event script.	**Trigger On:** After Record Submit **Context Type:** User Event Script

Custom Mass Update

Use the following sample settings to initiate a workflow and run actions and transitions for a Customer record updated with the following mass update script.

```
/**
* @NApiVersion 2.0
* @NScriptType MassUpdateScript
*/
define(["N/record"], function (record) {
    function customerMassUpdate(params) {
        record.submitFields({
            type: params.type,
            id: params.id,
            values: {
                comments: 'Specifying Customer Mass Update context'
            }
        });
    }

    return {
        each: customerMassUpdate
    };
});
```

Task Type	Description	Settings
Workflow initiation	Initiate workflow instance on a Customer record updated with a mass update script.	**Trigger On:** After Record Submit **On Create:** checked **On Update:** unchecked **Context:** Custom Mass Update
Action, Transition	Action or transition executes on a Customer record updated with a mass update script.	**Trigger On:** After Record Submit **Context Type:** Custom Mass Update

Examples of Event Types

Use the following examples for sample workflow definition settings that initiate a workflow instance or run actions and transitions for a specific event type.

Print Event Type

Use the following sample settings to initiate a workflow and run actions and transitions when a user clicks **Print** in view mode on an existing Customer record.

Task Type	Description	Settings
Workflow initiation	Initiate workflow instance on a Customer record printed in view mode.	**Record Type:** Customer **Trigger On:** Before Record Load **On Create:** unchecked **On Update:** checked **Event Types:** Print
Action, Transition	Action or transition executes on a Customer record printed in view mode.	**Trigger Type:** Before Record Load **Event Types:** Print

Mark Complete Event Type

Use the following sample settings to initiate a workflow and run actions and transitions when a user clicks **Mark Complete** in view mode on an existing Task record.

Task Type	Description	Settings
Workflow initiation	Initiate workflow instance on a Task record marked complete in view mode.	**Record Type:** Task **Trigger On:** Before Record Submit **On Create:** unchecked **On Update:** checked **Event Types:** Mark Complete
Action, Transition	Action or transition executes on a Task record marked complete in view mode.	**Trigger Type:** Before Record Submit **Event Types:** Print

Drop Ship Event Type

Use the following sample settings to initiate a workflow and run actions and transitions when a user clicks **Approve** in view mode on an existing Purchase Order record.

Task Type	Description	Settings
Workflow initiation	Initiate workflow instance on a Purchase Order record approved in view mode.	**Record Type:** Transaction, Purchase Order **Trigger On:** After Record Submit **On Create:** checked **On Update:** checked

Task Type	Description	Settings
		Event Types: Drop Ship
Action, Transition	Action or transition executes on a Purchase Order record approved in view mode.	**Trigger Type:** After Record Submit **Event Types:** Drop Ship

Workflow Search Examples

The following table lists the provided examples for working with searches:

Example	More Information
Finding active workflow instances that use buttons for transitions.	Using the Button Filter in a Workflow Instance Search

Using the Button Filter in a Workflow Instance Search

Use the **Button** filter in an advanced workflow instance search to view all records that currently have a button that must be clicked for the record in the workflow to transition to the next state. The filter only shows states that contain a button added with the Add Button action.

Use this type of search to find records that require approval, such as expense reports, budgets, and purchase requests. After you create the search, you can add the results of the search to the Reminders portlet on the dashboard. See Adding Workflow Search Results to the Dashboard.

To use the Button filter in an advanced workflow instance search:

1. Go to Reports > New Search.
2. On the **Search** page, click **Workflow Instance**.
3. On the **Workflow Instance Search** page, check the **Use Advanced Search** box.
4. On the **Criteria** subtab, in the **Filter** dropdown list, select **Button**.
5. In the **Workflow Instance Search** window, do one of the following:
   - To search for buttons that were added with the Add Button action and include the selected states, in the **Button** dropdown list, select **any of**.
   - To search for buttons that were added with the Add Button action and do not include the selected states, in the **Button** dropdown list, select **none of**.
6. In the dropdown list, select the states that you want to include in your search. To select multiple states, press the **Ctrl** key and the states that you want to select.
7. Click **Set**.
8. On the **Criteria** tab, continue to define the standard and summary search filters:

Subtab	Description
Standard	Select results based on the value of individual workflow instance values. For more information, see the help topic Defining Standard Search Filters.
Summary	Select results based on calculated summary property values for a group of workflow instances; this filter is available only if you defined a summary type for a field on the **Results** subtab. For more information, see the help topic Summary Search Filters.

9. On the **Results** subtab, set the sort values for the search results and the search results fields to display, define summary types for results fields, and select additional search result options.
10. To perform the search and display the results in NetSuite, click **Submit**.
11. (Optional) To view the individual record, in the search results, click **Record**.

Note: You can mimic the click of the button to process all or a subset of the records and transition the records to the next state. See Mass Processing Records in a Workflow.

Testing and Troubleshooting Workflows

After you create a workflow, you'll need to test it to make sure it works correctly and to troubleshoot any issues. While you're testing a workflow, you can use activity information from NetSuite to see current workflow instances for a record, current and past workflow states, and the actions and transitions performed by a workflow instance. Use this activity information to troubleshoot the behavior of the workflow.

Use the following information when testing and troubleshooting workflows:

- Viewing Workflow Activity
- Testing a Workflow
- Troubleshooting a Workflow
- SuiteFlow Best Practices

Viewing Workflow Activity

When a workflow runs on a record, SuiteFlow records the information about the workflow instance activity for the record. You can use this information when you test and troubleshoot workflows. NetSuite displays the activity on the Active Workflows and Workflow History tabs and in the workflow execution log. You can access the workflow information from any record that the workflow ran against.

The following table describes the workflow activity information generated by NetSuite:

Subtab/Log	Description	When to Use
Active Workflows Subtab	Current workflow instances running on a record. After a workflow completes, it no longer appears on this subtab.	Use the Active Workflows subtab when you want to see which workflow instances are running on a specific record.
Workflow History Subtab	Displays all states entered by the workflow instance. Includes all current and past state visits. Any state visit stays on this subtab for the life of the record.	Use the Workflow History subtab to get more information about each state visited by the workflow, and to view the workflow execution log.
Workflow Execution Log	All actions and transitions that executed for a state on a record. Deleted every 60 days. Appears if you enable logging for the workflow and have the administrator permission on the workflow, or if the state generated errors.	Use the workflow execution log when you test and troubleshoot a workflow, to see which actions and transitions ran or did not run for a state visit.
Workflow change logs in System Notes	Workflow revisions are logged in System Notes. Workflow revisions increment each time a change is made to a workflow. You can view workflow revision numbers by performing System Notes searches. The results of system notes searches display only the workflow revision number. For more detailed information about the revisions listed in search results, go to the Workflow Definition Page History Subtab of the workflow the change was logged for. For more information about system notes searches, see the help topic Searching System Notes.	Perform a System Notes search to see if changes have been made to a workflow.

Subtab/Log	Description	When to Use
	Note: You can't access System Notes for workflows on the System Notes subtab of a workflow record. System Notes can be accessed only from a System Notes search.	

In addition, if errors occur during the scheduled workflow processing, NetSuite sends an email to the owner of the workflow with the error messages in the body of the email. For more information, see Error Handling for Scheduled Workflows.

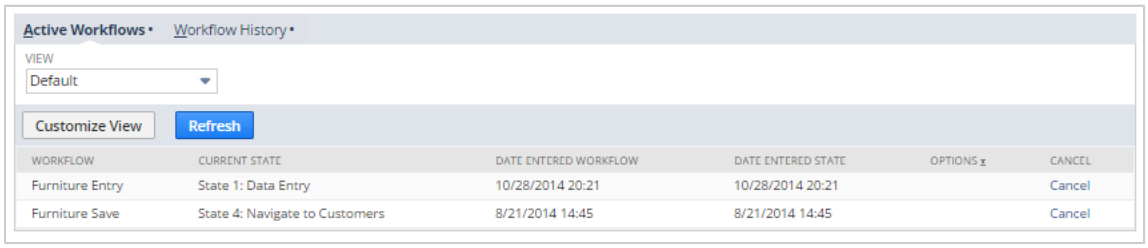
Note: To view workflow activity, users must have the Workflow permission assigned to their roles and SuiteFlow must be enabled in their accounts. For details, see Required Permissions for SuiteFlow.

Active Workflows Subtab

Use the Active Workflows subtab to get more information about the workflow instances that are currently running for a specific record. This subtab only shows active workflow instances for a record. After a workflow completes, it no longer appears on this subtab.

To access the **Active Workflows** subtab, select the record that the workflow runs on, click the System Information subtab, and then click the **Active Workflows** subtab. You can also click **Customize View** to add or remove columns on the Active Workflows subtab and save the customized view.

The following screenshot shows the **Active Workflows** subtab with an active workflow currently in **State 1 Data Entry**:



The following table describes the default columns displayed on the Active Workflows subtab:

Option	Description
Workflow	Name of the workflow.
Current State	Current state for the workflow.
Date Entered Workflow	Date and time when the workflow initiated.
Date Entered State	Date and time when the workflow entered the current state. Use the Workflow History subtab to get more information about actions and transitions that executed for this state, or any other state previously visited by the workflow.
Options	Lists any fields associated with the state that the workflow is currently running. Includes workflow fields and state fields and their current values. For more information about creating and using custom fields, see Workflow Custom Fields.
Cancel	Allows administrators to stop the current workflow instance. The cancel operation only cancels the current workflow instance. Other workflow instances on other records are not stopped.

Option	Description
	Click **Cancel** to stop the workflow.

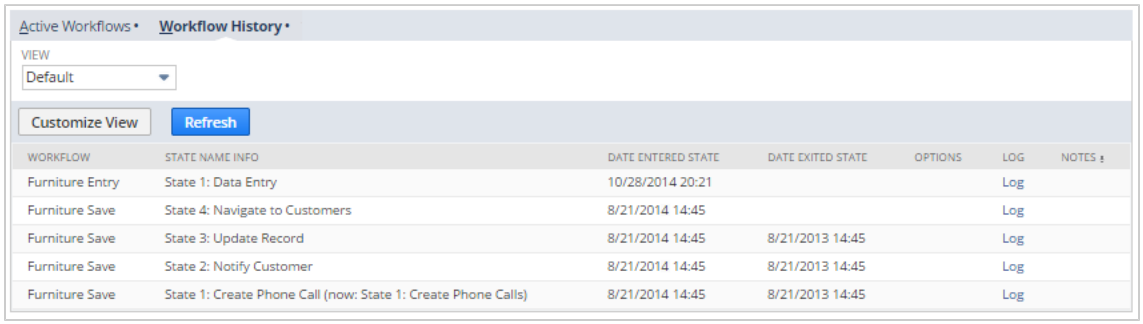
Workflow History Subtab

Use the **Workflow History** subtab to get more information about the states visited by workflow instances on a record. The subtab lists all states entered by the workflow, including any state that the workflow is currently in. A workflow state and the associated workflow execution log appears on the **Workflow History** subtab each time that the workflow enters a state. The state visit stays on the subtab for the life of the record, whereas the workflow execution log is deleted every 60 days.

For example, a workflow has 3 states: State 1, State 2, and State 3. A record enters the workflow in State 1 and then transitions to State 2. From State 2, the workflow transitions back into State 1, and has not entered State 3. Consequently, the states appear in the following order: 1, 2, 1.

To access the **Workflow History** subtab, select the record that the workflow instance ran on, click the **System Information** subtab, and then click the **Workflow History** subtab.

The following screenshot shows the **Workflow History** subtab:



The following table describes the default columns displayed on the Workflow History subtab:

Option	Description
Workflow	Name of the workflow.
State Name Info	The name of the state in the workflow. This column also indicates any state that was deleted or renamed after the workflow exited the state. For more information, see Deleted and Renamed States.
Date Entered State	Date and time when the record entered the state.
Date Exited State	Date and time when the record exited the state. If the value is empty, the record is currently in the state.
Options	Lists any custom fields associated with the state. Includes workflow fields and state fields. For more information about creating and using custom fields, see Workflow Custom Fields.
Log	Enables you to access the workflow execution log. Click **Log** to open the workflow execution log in a new window. For more information, see Workflow Execution Log.
Notes	If a workflow was canceled, this column shows the user name of the user who canceled the workflow when the workflow was in the state.

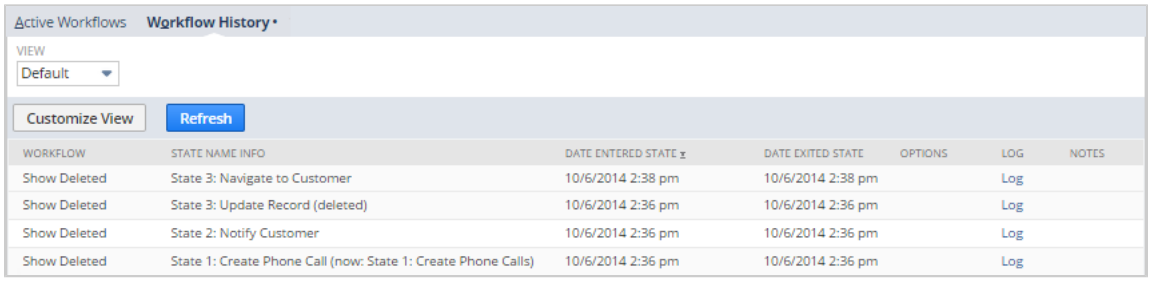
Note that errors aren't logged on the History subtab. This is because when an error occurs during a workflow's execution, the workflow is rolled back and the instance of the workflow no longer exists in the database. As such, errors can't be logged for an instance of a workflow that no longer exists in the database.

Deleted and Renamed States

When you delete or rename a state in Workflow Manager, the workflow history reflects the changes to the state in the **State Name Info** column on the **Workflow History** subtab. This lets you see changes to the states made to the workflow definition directly in the **Workflow History** subtab.

For example, a workflow exits a state named **Update Record** and then you delete the state. For any time the workflow has entered and exited the state, the **Workflow History** subtab shows the state name as 'Update Record (deleted)'. Similarly, if a workflow exits a state named **Create Phone Call** and then you rename the state to **Create Phone Calls**, the Workflow History subtab shows the old and new name for the state. If you rename a state when the workflow is currently in the state, NetSuite updates the **State Name Info** but indicates that the name was changed.

The following screenshot shows deleted and renamed states on the **Workflow History** subtab:



WORKFLOW	STATE NAME INFO	DATE ENTERED STATE	DATE EXITED STATE	OPTIONS	LOG	NOTES
Show Deleted	State 3: Navigate to Customer	10/6/2014 2:38 pm	10/6/2014 2:38 pm		Log	
Show Deleted	State 3: Update Record (deleted)	10/6/2014 2:36 pm	10/6/2014 2:36 pm		Log	
Show Deleted	State 2: Notify Customer	10/6/2014 2:36 pm	10/6/2014 2:36 pm		Log	
Show Deleted	State 1: Create Phone Call (now: State 1: Create Phone Calls)	10/6/2014 2:36 pm	10/6/2014 2:36 pm		Log	

Workflow Execution Log

The workflow execution log is a system-generated log that tracks all actions and transitions that run on a record for a specific state visit in a workflow. You can use the workflow execution log to debug and troubleshoot the workflow execution for a record. For example, you can use the log to determine which actions and transitions in a workflow did or didn't run.

To access the workflow execution log, select the record that the workflow instance ran on, and click the **System Information** subtab. On the **System Information** subtab, click the **Workflow History** subtab, then click **Log** for the state you want to view. NetSuite displays all log entries for the selected state visit in a new window.

You can use the workflow execution log to view the following types of information:

- Server Triggers
- Event Types and Contexts
- Action and Transitions Status
- Evaluation of Conditions
- Rejected Actions and Transitions

> **Note:** If the overall workflow execution fails, SuiteFlow rolls back any changes made by the actions in the workflow. However, the actions will still appear in the log.

Server Triggers

The workflow execution log displays each server trigger and the associated event type and context type for the trigger. Use this information to view the order in which actions and transitions executed and their corresponding triggers. You can expand and collapse each trigger to view the actions and transitions and the associated status for the action or transition.

The log displays the executed triggers for a specific workflow instance and a specific state visit in that workflow instance. Depending on the workflow definition and the events that occur on the record, for example, viewing and saving the record, the workflow may enter the same state multiple times. Consequently, you might see multiple entries for the same state in the workflow history. The workflow history doesn't include any state not entered by the workflow.

For an example of a record entering a state multiple times, see Approval Workflow Example.

Note: Client triggers don't appear in the workflow execution log.

The workflow execution log displays the server triggers in the order that the triggers run. They don't run in a fixed order. The order in which the triggers appear depends on the workflow definition and the events on the record.

The following table lists the server triggers:

Trigger	Description
ONENTRY	Record enters the state.
ONEXIT	Record exits the state.
BEFORELOAD	Before the record is loaded.
BEFORESUBMIT	Before the record is submitted to the database.
AFTERSUBMIT	After the record is saved to the database.
SCHEDULED	NetSuite scheduler executes the workflow based on the workflow schedule.

Additionally, a server trigger can be record, workflow, or time based:

- Record based. An event occurs on a record. For example, a record is loaded (BEFORELOAD) or saved (BEFORESUBMIT or AFTERSUBMIT).
- Workflow based. An event occurs on the workflow. For example, a workflow enters a state (ONENTRY) or exits a state (ONEXIT).
- Time based. The scheduled time for the workflow arrives (SCHEDULED).

Workflows use the following rules for the order in which the server triggers appear:

- If a workflow moves from state A to state B, the workflow first executes the ONEXIT trigger in state A and then the ONENTRY trigger in state B.
- If a user edits a record, the workflow executes the BEFORELOAD trigger when it loads the record. If a user then saves the record, the workflow executes the BEFORESUBMIT and AFTERSUBMIT triggers, in that order.
- For a specific state visit, only the triggers related to that state visit display.
- The log always starts with the ONENTRY trigger. If the record leaves the state, the last trigger in the log is always ONEXIT. ONEXIT never appears before ONENTRY.
- The BEFORELOAD, BEFORESUBMIT, and AFTERSUBMIT triggers may not appear in a log for a state visit, because the workflow may transition to another state or the workflow may finish.

Event Types and Contexts

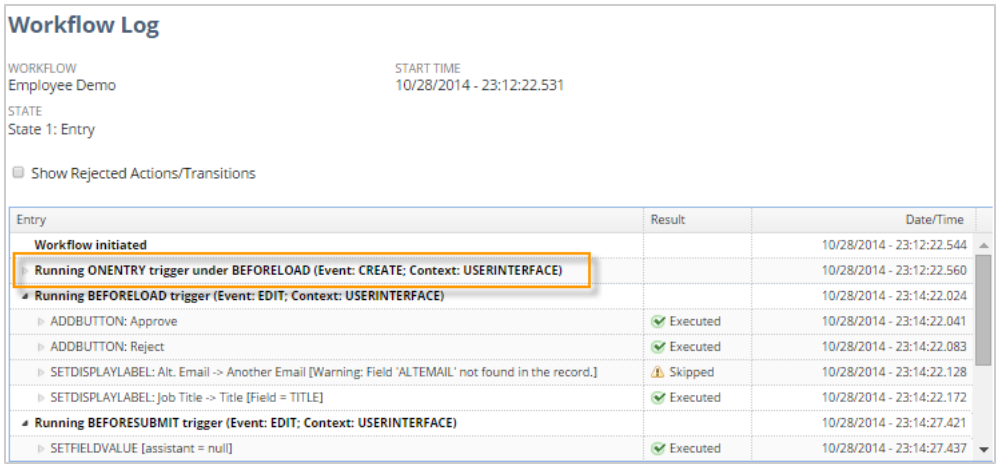
For each server trigger, the log lists the event and context. In addition, the log lists the server trigger on which the workflow entered the state. For example, if the workflow entered the state on a Before Record Load trigger, and the user viewed the record, the ONENTRY trigger displays as:

```
Running ONENTRY trigger under BEFORELOAD (Event: CREATE; Context: USERINTERFACE)
```

You can optionally set the context and event type for workflow initiation for specific use cases in the workflow definition. However, even if you don't specify the context or event type in the workflow definition, the log displays the context and event for each server trigger. For more information about event types and contexts, see the following:

- Workflow Event Types
- Event Types Reference
- Execution Context Types

The following screenshot shows a workflow execution log for a record that entered a state on a Before Record Load trigger:



Action and Transitions Status

The workflow execution log shows the results of each action or transition.

If an action or transition uses a server trigger that occurs before the trigger on which the workflow enters the state, the action or transition won't run or appear in the log. For example, an Add Button action uses a Before Record Load trigger. If the workflow enters the state on a Before Record Submit trigger, the workflow won't process the Add Button action.

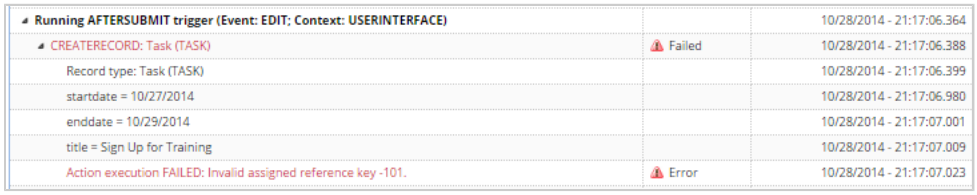
The following table lists the results that may be shown in the log for each action or transition:

Result	Description
Executed	Indicates that the action or transition completed successfully.
Failed	Indicates that the action or transition did not complete. The log lists the reason for failure. The workflow skips subsequent actions for the specific server trigger. If you run the workflow again, the same actions will attempt to process, and may fail again.
Skipped	One of the following events occurred: ▪ A non-critical error occurred to prevent an action or transition from executing, but this error did not stop the execution of subsequent workflow actions or transitions. ▪ The action isn't supported by the trigger on which the record entered or exited the state. For example, if a record enters a state on a Before Record Load trigger and you set the trigger for a Send Email action as Entry, the Send Email action is skipped. Use the Trigger On field to view supported triggers for the Send Email action. For more information, see Skipped Actions.

Result	Description
	For skipped actions, the log also includes a Warning for any errors associated with the action.
Considered	One of the following occurred: ■ A condition created with the Condition Builder or a custom formula on an action or transition evaluated to false. ■ The action or transition includes a saved search as a condition, and the record was not returned by the saved search. ■ The record was set to transition after another workflow completed or after another workflow exited a state. However, the other workflow had not completed or the other workflow had not finished with the specified state.

In addition, for each action or transition, the workflow execution log includes the properties for the action or transition. You can use the action or transition properties to help troubleshoot the workflow execution.

The following screenshot shows the log for a failed Create Record action:



Running AFTERSUBMIT trigger (Event: EDIT; Context: USERINTERFACE)		10/28/2014 - 21:17:06.364
CREATERECORD: Task (TASK)	Failed	10/28/2014 - 21:17:06.388
Record type: Task (TASK)		10/28/2014 - 21:17:06.399
startdate = 10/27/2014		10/28/2014 - 21:17:06.980
enddate = 10/29/2014		10/28/2014 - 21:17:07.001
title = Sign Up for Training		10/28/2014 - 21:17:07.009
Action execution FAILED: Invalid assigned reference key -101.	Error	10/28/2014 - 21:17:07.023

Evaluation of Conditions

The workflow execution log shows the results of each evaluated condition for actions and transitions. For each condition, the log displays the condition that was evaluated and either True or False for the condition. You can use this information to find out why an action or transition did or didn't run because of a condition.

The log includes evaluation of the following types of conditions:

- Condition created with the Condition Builder
- Custom formula
- Saved search
- Completion of another workflow or completion of another workflow within the specified state (transitions only)

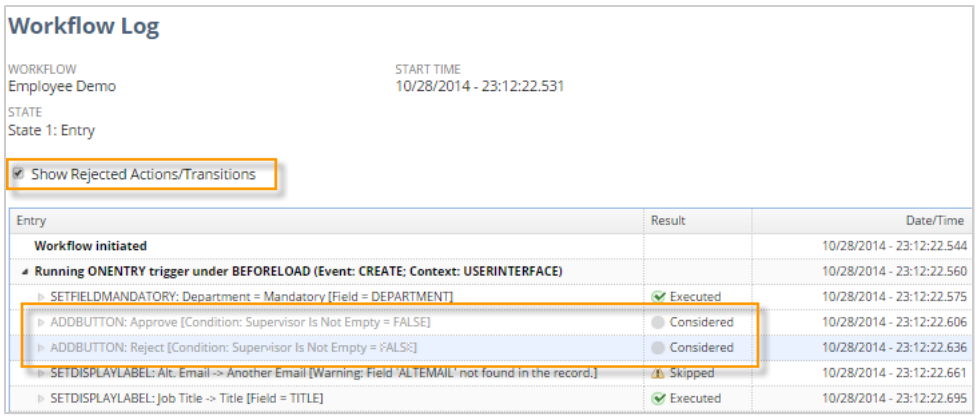
The following screenshot shows two conditions that evaluated to false, and consequently, the Return User Error action didn't run:

ADDBUTTON: Approve	Considered	10/28/2014 - 23:12:22.606
Condition: Supervisor Is Not Empty	False	10/28/2014 - 23:12:22.625
ADDBUTTON: Reject	Considered	10/28/2014 - 23:12:22.636
Condition: Supervisor Is Not Empty	False	10/28/2014 - 23:12:22.652

Rejected Actions and Transitions

If you select the **Show Rejected Actions/Transitions** box, the log displays actions and transitions that were rejected, for example, actions with conditions that evaluated to false. Use this option to see why the actions or transitions were considered and then not executed.

The following screenshot shows an example of considered actions that appear in the log when you select the **Show Rejected Actions/Transitions** box:



Asynchronous Execution for Workflows

The workflow execution log indicates which workflow tasks were processed asynchronously. Workflow tasks that run asynchronously are placed in the scheduling queue and run in the order in which they're placed in the queue. You can direct the Workflow Manager to process workflow tasks asynchronously using the `task.WorkflowTriggerTask` object. For more information, see the help topic task.WorkflowTriggerTask.

For example, for asynchronous execution, the workflow execution log displays the following message:

```
Running ONENTRY trigger under AFTERSUBMIT (Event: CREATE; Context: WEBSTORE) Asynchronous execution
```

Error Handling for Asynchronous Workflow Tasks

When you create an asynchronous workflow task and an error occurs while processing, NetSuite sends the error details to the to the workflow owner in an email. An error can be a user error or an internal SuiteFlow error. You can use the information in the email message to troubleshoot the workflow.

NetSuite sends an email message for errors that occur with the Asynchronous workflow execution task when initiated using task.WorkflowTriggerTask in SuiteScript 2.x.

> **Note:** NetSuite also sends an email if an error occurs when a scheduled workflow record is loaded or saved.

The following errors can happen when workflow tasks are processed asynchronously:

- **Errors during workflow execution**. For instance, a workflow creates a new record using the Create Record action, however the action doesn't specify values for all required fields. The Create Record action consequently fails.
- **Skipped record errors**. These errors happen when two asynchronous tasks run at the same time and try to process the same record. In such cases, NetSuite prevents records from being processed by two or more asynchronous workflow tasks in parallel. When this happens, some records may get skipped. For instance, if one task starts processing the record and the second task attempts to as well, the second task must wait until the first finishes. The second task only waits for a limited time, so it might not get to process the record before time runs out.
- **Infrastructure shutdown.** During maintenance, asynchronous tasks might be stopped. The tasks would finish processing the current record, but would be unable to process any more records until the next scheduled workflow execution. Any records that can't be processed during downtime are reported as skipped.

In the case of any of the listed errors, NetSuite sends an email to the workflow owner to notify of the errors occurrence.

Error Handling for Scheduled Workflows

When you create an asynchronous workflow task, if an error occurs during the processing of the workflow, NetSuite sends the error details to the owner of the workflow in an email. An error can be a user error or an internal SuiteFlow error. You can use the information in the email message to troubleshoot the workflow.

NetSuite sends an email message for errors that occur with the following types of scheduled workflow tasks:

- Scheduled workflows
- Scheduled actions
- Delayed processing of subscribed records. For example, a workflow instance subscribes to a record with the Subscribe To Record action and triggers when the record changes. If a large number of subscribed records change, NetSuite may add the workflow instances to the workflow queue and trigger the workflow instances on the next run of the NetSuite scheduler. See Creating and Subscribing to a Record.
- Execute Now feature which manually executes scheduled workflows

> **Note:** NetSuite also sends an email if there's an error when a scheduled workflow record is loaded or saved.

The following errors are possible for scheduled workflows:

- **Errors during workflow execution**. For example, a workflow creates a new record with the Create Record action, but the action doesn't specify values for all required fields. The Create Record action consequently fails.
- **Infrastructure shutdown.** During maintenance, scheduled tasks might be stopped. The tasks would finish processing the current record, but would be unable to process any more records until the next scheduled workflow execution. The records that couldn't be processed during the infrastructure downtime are reported as skipped.

In the case of any of the listed errors, NetSuite sends an email to the workflow owner to notify of the errors occurrence.

NetSuite sends the email with the workflow name in the subject line and the internal record ID and error message in the body of the email. For example, for an error with a workflow named 'Expense Approval' on a record with an ID of 123, the email appears with the following subject and body:

Subject: `Workflow Failure: Expense Approval`

Body: `ID: 123 – End date must be after start date`

The number of emails sent by NetSuite depends on the number of errors that occur. NetSuite sends an email for each of the first five errors in a workflow. If more than five errors occur, NetSuite waits until the workflow processing completes and then sends all errors, including the first five, in a single email message.

Testing a Workflow

Before making a workflow available to all users, test it to make sure that the workflow runs correctly. Complete the following steps to test a workflow:

- Set up the workflow for testing. Enable logging and set the release status. For more information, see Setting Up a Workflow for Testing.
- Test conditions. Set up a testing scenario where you can verify that the conditions can evaluate to both true and false. For more information, see Testing Workflow Conditions.
- Test actions and transitions. Make sure that actions and transitions appear in the workflow execution log and complete successfully. For more information, see Testing Actions and Transitions.
- Test buttons. Make sure buttons appear in all states of the workflow where they're required. For more information, see Testing Buttons.
- Test Send Email actions. Use the workflow execution log to make sure that the Send Email actions send an email. For more information, see Testing a Send Email Action.
- Test scheduled workflows. Initiate a scheduled workflow to start immediately and quickly test the logic in the workflow. For more information, see Testing Scheduled Workflows.
- Test scheduled actions and transitions. Set the smallest possible delay on a scheduled action or transition for testing. For more information, see Testing Scheduled Actions and Transitions.
- Test for user access. Test access for specific roles, test from within the Employee Center, and test access to related records. For more information, see Testing for User Accessibility.

Note: Workflow errors can occur due to incorrect triggers on actions and transitions. Make sure you review triggers and the SuiteFlow trigger execution model. For information, see Workflow Triggers and SuiteFlow Trigger Execution Model.

Setting Up a Workflow for Testing

To set up a workflow for testing, complete the following tasks:

- Set the **Release Status** to **Testing** and make sure you're the owner of the workflow. Only the workflow owner can initiate a workflow in testing mode on a record. However, the workflow actions will run for any user after the workflow starts. After you test the workflow and verify that it runs correctly, you can set the **Release Status** to released mode. Workflows set to released mode run for any user who has access to the record in the workflow.

  For more information about release statuses and user access to workflows, see Release Status for Workflow Instances and Workflow Audience.
- Enable logging on the workflow. Enable logging to view the actions and transitions performed by the workflow in the workflow execution log.

  For more information about the **Enable Logging** property, see Creating a Workflow.

Testing Workflow Conditions

If you use conditions in your workflow, use the workflow execution log to make sure that the conditions work as designed. In general, make sure that you create conditions that can be met. Otherwise, the condition can never evaluate to true and the workflow doesn't run as expected.

Run the following condition tests on a workflow:

- Test a scenario when the condition evaluates to true to make sure that the workflow executes the actions and transitions as expected.
- Test a scenario when the condition evaluates to false to make sure that the workflow doesn't process the actions and transitions.
- If you have a condition on the workflow initiation, verify that the workflow does or doesn't initiate based on the condition.

Tip

If actions or transitions with conditions don't process, temporarily remove the condition and then run the workflow again. If the workflow runs correctly, the condition has an error.

Testing Actions and Transitions

When you test a workflow, review the workflow execution log to see which actions and transitions did or didn't process during the run of your workflow. Based on log details, you can make changes to the workflow to resolve issues with actions or transitions. For more information about the workflow execution log, see Workflow Execution Log.

Actions and transitions can have one the following statuses:

- Executed
- Failed
- Skipped
- Considered

In addition, an event or transition may not appear in the log because they didn't run. SuiteFlow will only attempt to process actions of the appropriate trigger type. Make sure that you understand triggers and the Suiteflow triggering model. For more information, see Workflow Triggers.

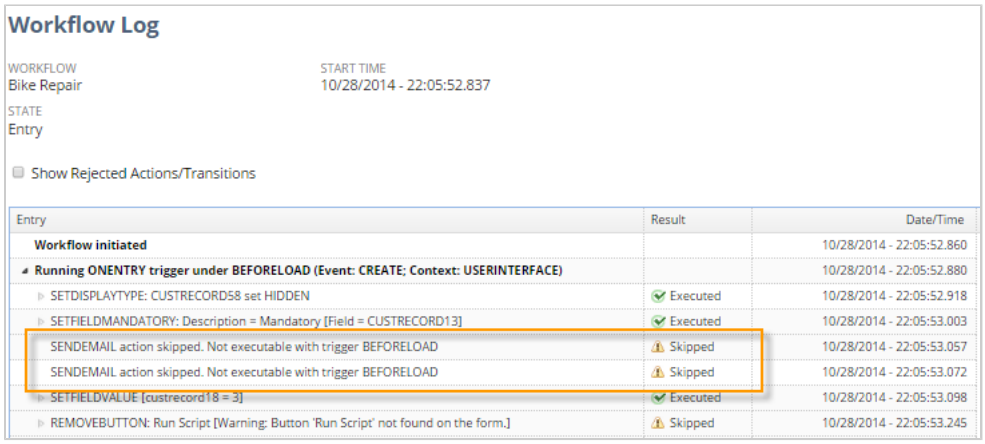
Tip

To test the execution of one specific action within a state, set all other actions in the state to **Inactive**. For each action, select the **Inactive** box on the action definition page and save the action. After you test, you can re-activate the actions. You can also change the trigger type for the action to make sure the action trigger type didn't cause the failure.

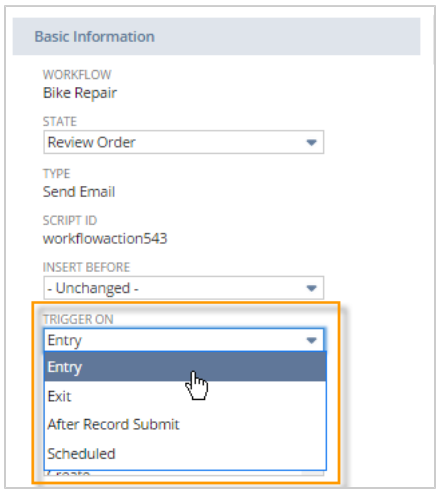
Skipped Actions

When SuiteFlow skips an action, it may be because that action isn't supported for the server trigger on which the workflow entered the state.

The following screenshot shows a record that entered a state on a Before Record Load trigger and consequently, the Send Email action was skipped:



You can view the options for the Send Email trigger on the Send Email action definition page in the **Trigger On** dropdown list:



This action can be executed on any of the four triggers listed, depending on the server trigger on which the record enters the state. Since Before Record Load isn't an option for the action, the workflow skips the action when running ONENTRY trigger under BEFORELOAD.

> **Note:** The absence of the Before Record Load trigger type for the Send Email action means that even with the trigger type set to Entry or Exit, this action will be skipped if the record enters the state on a Before Record Load or Before Record Submit trigger.

Testing Buttons

You must test Add Button actions in each state where you want the button to appear. For example, if you want a Close Order button to appear on a record form as it moves from state to state, you must add the Add Button action for the Close Order button to every state in the workflow. If you only add it to the first state,the button won't appear in any later state in the workflow.

You can use the workflow execution log to test the context of the record and make sure that the triggers for the Add Button action are set correctly. For example, a workflow initiates on an After Record Submit trigger, indicating the user clicked Save on the record. The workflow doesn't process any actions set to trigger before the After Record Submit trigger executes. Since the Add Button actions are set to trigger on Before Record Load, which occurs before the After Record Submit trigger, the workflow doesn't process the Add Button actions.

In this example, you can change the workflow initiation trigger to All or Before Record Load. You could also redesign the workflow so that the record enters the state with the Add Button actions on a Before Record Load or Entry trigger.

> **Note:** If you create a workflow that includes an Add Button action, when a user interacts with the button and the record is saved, the System Notes will list the role of the user as Administrator, regardless of the role the user is logged in as. This behavior is expected and isn't related to the Execute As Admin property on the Workflow Definition page.

Testing a Send Email Action

You can use the workflow execution log to test if a Send Email action executes. You can use your own email address in the **Cc** fields in both the **Sender** and **Recipient** sections of the Send Email action definition page. Verify that the Send Email action works correctly by viewing the results on the workflow

execution log and checking your email account. If it works as designed, you can reset the correct email address before you set the workflow to a **Released** status.

For more information about the workflow execution log, see Workflow Execution Log.

Testing Scheduled Workflows

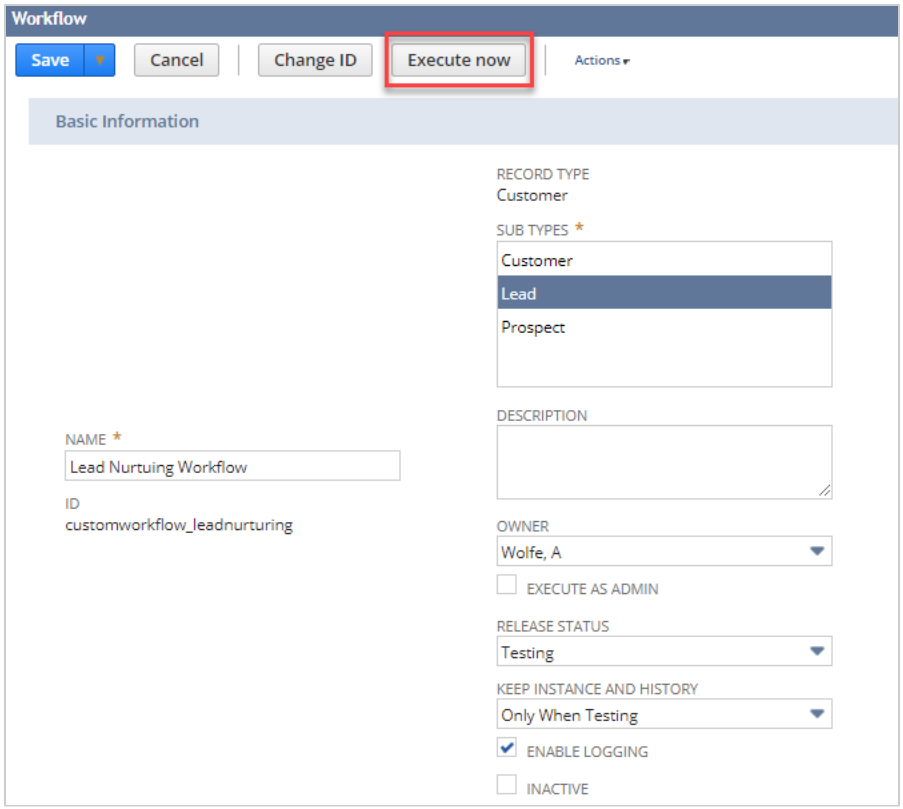
You can run a scheduled workflow on demand to test it. When you run a workflow on demand, NetSuite places it in the scheduling queue. The workflow initiates in the order in which it was placed in the queue. The workflow must be set to initiate on a schedule and must be in testing mode. After NetSuite initiates the workflow, you must wait for it to complete before you can run it again.

Run a workflow on demand when you want to test the workflow without waiting for its the next scheduled run. Normally, the NetSuite scheduler evaluates workflows set to initiate on a schedule every 30 minutes. To bypass the NetSuite scheduler, open a scheduled workflow in edit mode and click the Execute now button. Executing a workflow on demand immediately tests the logic in a scheduled workflow and reduces the time required for workflow development and testing.

When you run a workflow on demand, NetSuite only processes the first 20 records returned by the saved search. For example, if the saved search for a scheduled workflow returns 1000 records, the workflow only initiates on the first 20 records returned by the saved search.

The workflow initiates on the first 20 records in any order. For example, a saved search returns records in the order: A, B, and C; the workflow may initiate on record B first, then C and A. In addition, the first 20 records may include the same record multiple times. If the saved search returns repeated records in the first 20 results, each unique record is processed only one time.

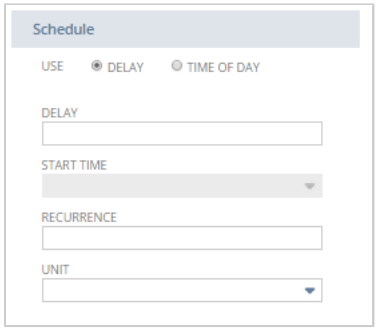
The following screenshot shows the **Execute now** button on the workflow definition page for a scheduled workflow:



Testing Scheduled Actions and Transitions

To test workflows that include scheduled actions or scheduled transitions, set the **Delay** and **Unit** fields to the smallest increments possible. This reduces the amount of time before the scheduled action or transition executes.

The following screenshot shows the **Schedule** options for an action or a transition:



The NetSuite scheduler runs scheduled actions every 30 minutes. Depending on the time you save the settings, the largest amount of time until the next scheduler run is 30 minutes.

Testing for User Accessibility

You must test a workflow for every user role you want it to run for. When you develop a workflow as an administrator, each workflow runs properly if it's designed correctly. However, you must test the workflow by logging in as the separate user roles for which the workflow will run.

You must test the following accessibility scenarios:

- Access for a specific role. You must test that there are no permission or other restrictions on the record type that would prevent a workflow from running correctly for a specific role. For example, for a lead record that is updated by sales reps, log in with a sales rep role to test the workflow.
- Access from within the Employee Center. If users create or update the record from within the Employee Center, access the record from within the Employee Center with the proper role to test the workflow.
- Access to related records. If a workflow sets a value on a record using the Set Field Value action, and the Set Field Value action gets the value from a related record, you must test that the user role has access to the related record. For example, the record for the workflow is Purchase Order and the workflow runs a Set Field Value action. The Set Field Value action gets the value from a Vendor or Employee record. Verify that any role that works with the Purchase Order has at least View access to the Vendor and Employee records also.

For more information about accessing data in related records, see Defining the Workflow Audience and Execute as Admin for Workflow Instances.

Troubleshooting a Workflow

Use the workflow execution log and this section to troubleshoot workflow issues for the following areas:

- General workflow issues. Includes issues with a workflow not starting or completing, records hanging on load or not exiting a workflow, and workflow execution limit errors. For more information, see General Workflow Issues.
- Issues with state transitions in a workflow. Includes how to manually transition to a different state in a workflow.

- Actions. Includes issues with actions not executing. For more information, see Action Issues.
- User accessibility. Includes issues with workflows not executing for certain users and limitations on the roles for which a workflow executes. For more information, see User Accessibility Issues.
- Buttons. Includes issues with buttons disappearing and issues removing buttons. For more information, see Button Issues.

For examples on how to troubleshoot a workflow, see Troubleshooting Workflows Examples.

General Workflow Issues

The following table lists common workflow issues and their associated solutions:

Issue	Solution
The workflow did not process for you during testing.	Take one of the following actions: 1. Make sure that the **Owner** field on the workflow definition page is your user account. If the workflow release status is set to **Testing**, the workflow only runs for the owner of the workflow. 2. If there is a workflow initiation condition, make sure that the record meets the condition and that the condition can evaluate to true. A workflow doesn't initiate if the workflow initiation condition doesn't evaluate to true. 3. If the workflow runs on a schedule, make sure that the workflow release status is **Released**. If the release status is **Testing**, the workflow won't run on a schedule.
Users report that when the record in the workflow loads into the browser, the browser hangs and they can't enter data.	If you set a formula in the Condition Builder, check the syntax of the JavaScript or SQL formula. If you set a workflow action to run on a client trigger, the formula in the Condition Builder must be a JavaScript formula. If you set the action to occur on a server trigger, the formula in the Condition Builder must be a SQL formula.
You receive the following error message: `Notice (SuiteScript) : Workflow Execution Usage Limit Exceeded`	Take one of the following actions: 1. Check the actions in each workflow state. Make sure that the number of actions in each state doesn't exceed the 1000 unit usage limit. For more information about workflow governance limits, see the help topic Script Type Usage Unit Limits. 2. Check for an infinite loop. For example, if you have a workflow that transitions from State 1 to State 2, and then from State 2 back to State 2 more than 50 consecutive times, the system identifies it as an infinite loop and a throws the "Workflow Execution Usage Limit Exceeded" error.
In an approval routing workflow, the **Next Approver** field isn't set correctly.	For more information, see FAQ: SuiteFlow.
The workflow did not complete its execution.	Take one of the following actions: 1. Determine if the workflow executed. For example, if the workflow runs on an Opportunity record, go to a new Opportunity record to see if the workflow executed on that record. Check the **Workflow History** subtab on the opportunity record to see which states the record entered in the workflow. 2. Check the transitions. For example, an Opportunity record enters a workflow with two states, State 1 and State 2. If the

Issue	Solution
	record did not enter State 2, view the workflow definition and check the transition from State 1 to State 2. Look for errors in the transition definition or any errors in the condition.
Field value in actions or conditions always returns a null value.	If you create a workflow that includes a field value in actions or conditions and it always returns a null value, you could be experiencing an issue with permissions. To resolve this issue, check the **Execute As Admin** box in the workflow definition. For more information, see Execute as Admin for Workflow Instances. If you create a workflow that is triggered by the inline edit action, the field value in actions or conditions may return a null value. The reason for this is that the record that the workflow runs on may not be loading completely because of the inline edit action.
In a workflow with an Add Button action, the role of the user who interacted with the button is incorrectly listed as Administrator in the System Notes.	If you create a workflow that includes an Add Button action, when a user interacts with the button and the record is saved, the System Notes will list the role of the user as Administrator, regardless of the role the user is logged in as. This behavior is expected and isn't related to the Execute As Admin property.
The scheduled workflow did not run as expected.	If you schedule workflows to run on saved searches on SuiteApp bundles, you must have the SuiteApp Marketplace permission assigned or the scheduled workflow won't run as expected.

Action Issues

The following table lists common workflow action issues and their associated solutions:

Issue	Solution
You added or edited workflow actions, but the actions don't run.	Take one of the following actions: 1. Refresh your browser. If you add an action with a server trigger, but the action doesn't run when you test the workflow, refresh your browser. For example, you add a Set Field Mandatory action to a state, but the action doesn't appear to run. 2. Make sure the trigger type for the action is compatible with the trigger on which the record enters the state. This error can occur when you have a state that includes an action set to trigger on Entry or Exit but the server trigger isn't supported by the action. For example, Add Button actions don't run when the record enters the state on a Before Record Submit trigger. For more information, see SuiteFlow Trigger Execution Model. For more information about triggers on actions, see Action Triggers

User Accessibility Issues

The following table lists common user accessibility issues and their associated solutions:

Issue	Solution
The workflow did not run for other NetSuite users.	Take one of the following actions: 1. Check the **Release Status** field for the workflow. Make sure that the **Release Status** for the workflow is set to **Released**. Workflows set to **Released** will run for any user who has access to the record in the workflow.

Issue	Solution
	2. Check the required fields for actions. For example, if the workflow contains a Create Record action, make sure you set all required fields for the new record that you want to create. Otherwise, the workflow fails for that user.
Only certain users or certain roles seem to be able to run a specific workflow.	On the workflow definition page, select the **Execute As Admin** box. Use the **Execute as Admin** property if you want the workflow to run using administrative privileges, regardless of the permissions of the currently logged-in user. For more information about what users and roles have access to workflows, see Workflow Audience.

Button Issues

The following table lists common Add Button action issues and their associated solutions:

Issue	Solution
Buttons added to a record for the workflow disappear when the browser is refreshed.	Make sure that the Add Button actions trigger on Before Record Load, not on Entry. For more information, see the Workflow FAQ Q: .
Buttons removed from the record for the workflow become visible when the browser is refreshed.	Make sure that the Add Button actions trigger on Before Record Load, not on Entry. For more information, see the Workflow FAQ Q: .

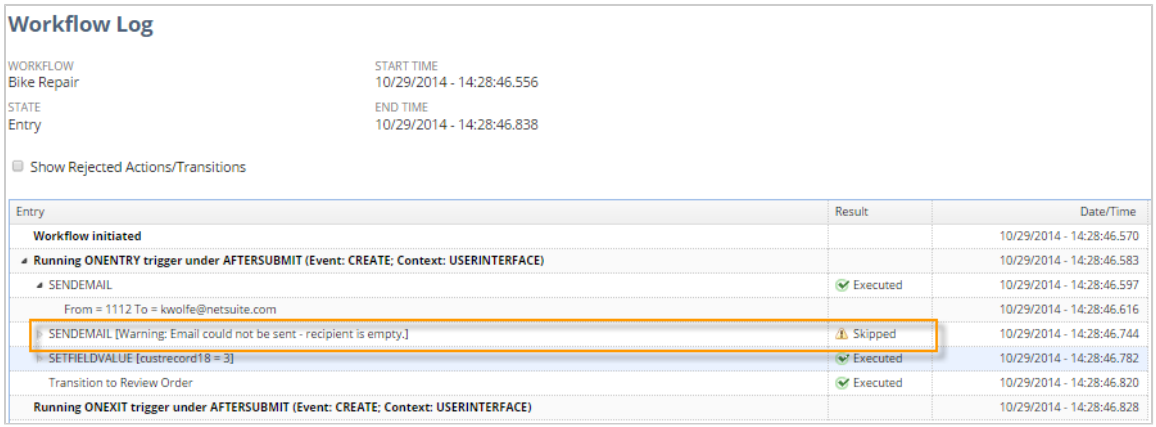
Troubleshooting Workflows Examples

Use the following examples for more details about how to use the workflow execution log to view information and troubleshoot a workflow:

- Actions didn't run. Use this example to get more information about how to troubleshoot a workflow when certain actions didn't run. See Workflow Actions Did Not Execute Example.
- Viewing an approval workflow. Use the workflow execution log to verify that a workflow initiated and that the actions for an approval workflow run. See Approval Workflow Example.

Workflow Actions Did Not Execute Example

The following screenshot shows the workflow execution log for a Bike Repair workflow that executed on a custom record and entered a state called Entry on an After Record Submit trigger:



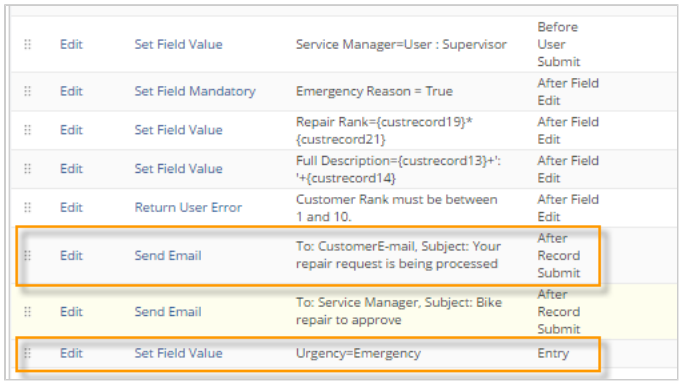
The execution log shows the following information about the workflow:

- The workflow initiated on this record.
- The entry trigger, ONENTRY, ran. In addition, the initiation trigger for the workflow is After Record Submit: `Running ONENTRY trigger under AFTERSUBMIT`.
- A Send Email action executed but the workflow skipped the other Send Email action.
- A Set Field Value action executed.
- The Exit trigger, ONEXIT, executed.

Issues with the Workflow

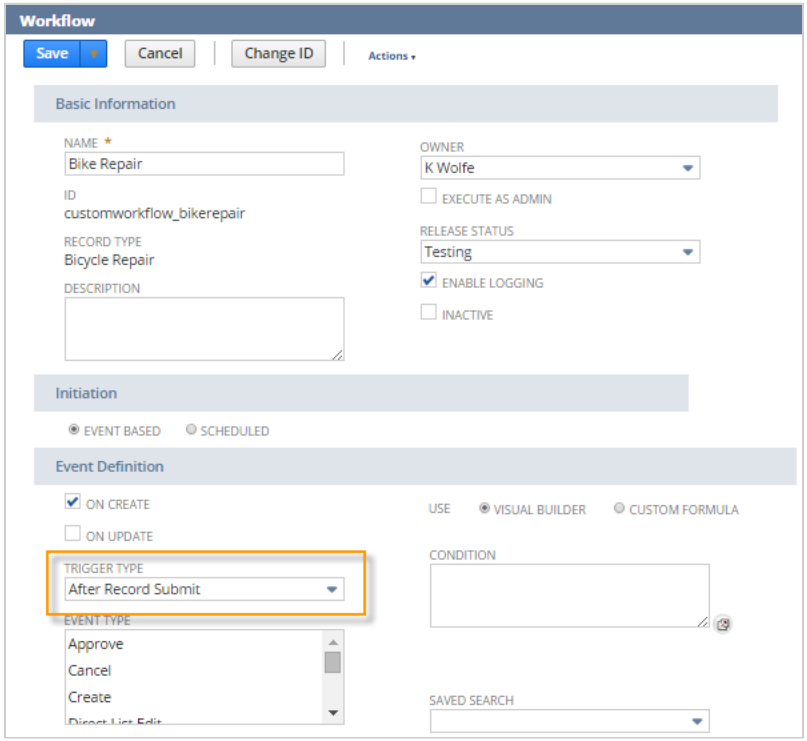
Although two actions did run, the workflow state contains many more actions. The other actions didn't run because of the server trigger on which the record entered the state.

The following screenshot shows a portion of the **Workflow State** window and the two actions that executed:



Edit	Set Field Value	Service Manager=User : Supervisor	Before User Submit
Edit	Set Field Mandatory	Emergency Reason = True	After Field Edit
Edit	Set Field Value	Repair Rank={custrecord19}* {custrecord21}	After Field Edit
Edit	Set Field Value	Full Description={custrecord13}+': '+{custrecord14}	After Field Edit
Edit	Return User Error	Customer Rank must be between 1 and 10.	After Field Edit
Edit	Send Email	To: CustomerE-mail, Subject: Your repair request is being processed	After Record Submit
Edit	Send Email	To: Service Manager, Subject: Bike repair to approve	After Record Submit
Edit	Set Field Value	Urgency=Emergency	Entry

The following screenshot shows the initiation trigger type for the workflow:

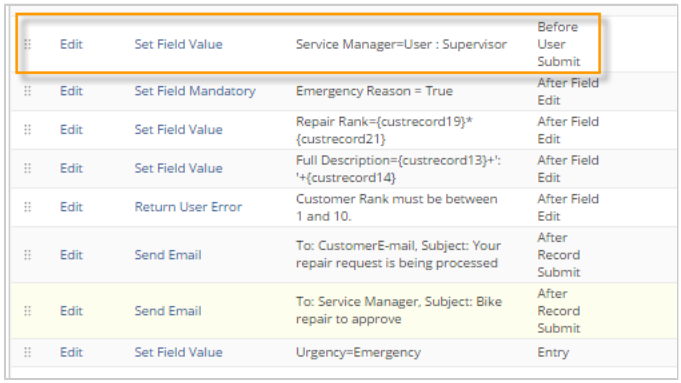


Because the workflow initiated on an After Record Submit trigger, the record entered the state on an After Record Submit trigger, and the following issues occurred:

- The Send Email and Set Field Value actions executed because they were valid actions for a state with an After Record Submit trigger.
- The other Send Email action failed, even though it was set to process on an After Record Submit trigger, because it required the Service Manager field to be set. However, the Service Manager field wasn't set because the action that set the value didn't run because of its trigger: Before Record Submit.

This workflow doesn't initiate until after the data on the record is written to the database. Consequently, any action set to run before the data is written to the database doesn't run. In this example, only actions with an After Record Submit, Entry, or Exit trigger run.

The following screenshot shows the original configuration of the Set Field Value action:



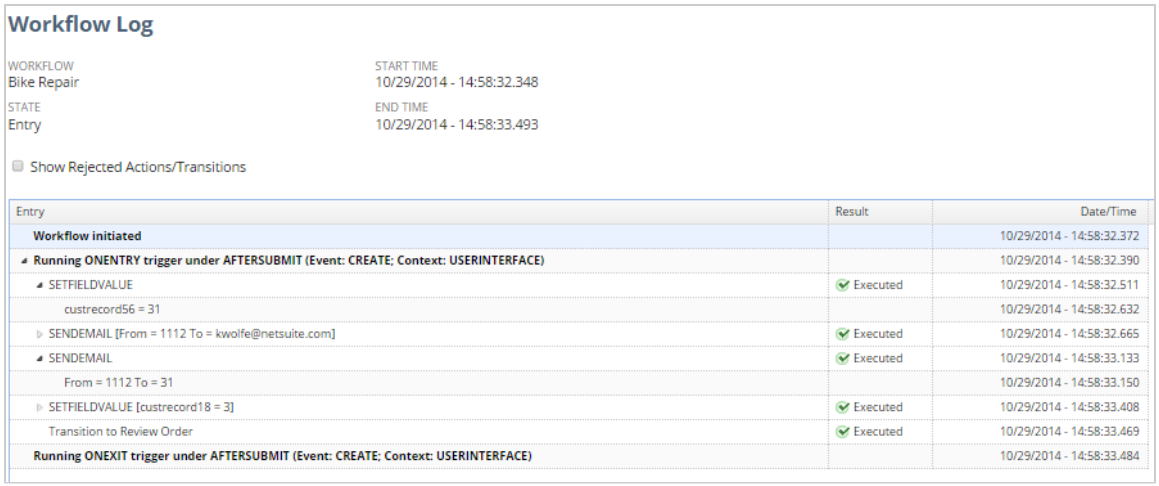
	Edit	Set Field Value	Service Manager=User : Supervisor	Before User Submit
	Edit	Set Field Mandatory	Emergency Reason = True	After Field Edit
	Edit	Set Field Value	Repair Rank={custrecord19}* {custrecord21}	After Field Edit
	Edit	Set Field Value	Full Description={custrecord13}+': '+{custrecord14}	After Field Edit
	Edit	Return User Error	Customer Rank must be between 1 and 10.	After Field Edit
	Edit	Send Email	To: CustomerE-mail, Subject: Your repair request is being processed	After Record Submit
	Edit	Send Email	To: Service Manager, Subject: Bike repair to approve	After Record Submit
	Edit	Set Field Value	Urgency=Emergency	Entry

Solution

To make sure that the Send Email action to the Service Manager completes, complete one of the following two tasks:

- Change the workflow initiation trigger type to All or Before Record Submit. Consequently, any of the Before Record Submit actions will run.
- Change the trigger type of the Set Field Value action to After Record Submit. Since the workflow initiates on an After Record Submit trigger, the Set Field Value action will run.

The following screenshot shows the workflow execution log after the trigger type for Set Field Value action is changed to After Record Submit:



Workflow Log

WORKFLOW
Bike Repair

START TIME
10/29/2014 - 14:58:32.348

STATE
Entry

END TIME
10/29/2014 - 14:58:33.493

Show Rejected Actions/Transitions

Entry	Result	Date/Time
Workflow initiated		10/29/2014 - 14:58:32.372
Running ONENTRY trigger under AFTERSUBMIT (Event: CREATE; Context: USERINTERFACE)		10/29/2014 - 14:58:32.390
SETFIELDVALUE	Executed	10/29/2014 - 14:58:32.511
custrecord56 = 31		10/29/2014 - 14:58:32.632
SENDEMAIL [From = 1112 To = kwolfe@netsuite.com]	Executed	10/29/2014 - 14:58:32.665
SENDEMAIL	Executed	10/29/2014 - 14:58:33.133
From = 1112 To = 31		10/29/2014 - 14:58:33.150
SETFIELDVALUE [custrecord18 = 3]	Executed	10/29/2014 - 14:58:33.408
Transition to Review Order	Executed	10/29/2014 - 14:58:33.469
Running ONEXIT trigger under AFTERSUBMIT (Event: CREATE; Context: USERINTERFACE)		10/29/2014 - 14:58:33.484

After changing the trigger type for Set Field Value action to After Record Submit, the workflow execution log shows that the Set Field Value and Send Email actions, which didn't process before, now run properly.

Workflow Fails Randomly

If your workflow fails randomly, review the following information and try the suggested resolutions.

Issue Description

A workflow executes as expected on multiple transactions or records, but then it randomly doesn't process properly. The rate that the workflow fails to run at is extremely low: the workflow fails to process properly on approximately one out of every thousand transactions or records. When you check the workflow history for the transaction or record, it shows that the workflow and actions executed but there's no corresponding effect on the transaction or record.

Cause

The workflow fails to process properly because the Workflow Instance Data and Record Data aren't in sync. This behavior is referred to as a Transaction Management problem. The Workflow Instance Data and Record Data are initially synchronized, but when any error occurs, the transaction or record is rolled back by the Transaction Management process while the workflow data isn't rolled back. The workflow remains in its current state, which isn't the same state that the transaction or record is in. Consequently, the Workflow Instance Data and Record Data become out of sync.

For example, if this error occurred with an approval workflow, the workflow would remain in the approved state and the record would be in a state pending approval.

Resolution

If you have transactions or records that appear to be stuck in a workflow state, try any of the following to resolve the issue:

- Use the Mass Updates feature to move the workflow to the same state that the transaction or record is in. For more information about transitioning an active workflow on a record outside of the defined workflow execution path, see Mass Transitioning Workflow Instances.
- Cancel the current instance of the workflow. Rerun the workflow on the transaction or record.
- Recreate the transaction or record.

Approval Workflow Example

If you create a workflow for a base record type of Estimate, you can view a newly created estimate to see if the record entered the workflow. You can use the workflow execution log to get more details on the specific actions for each state.

The following screenshot shows the configuration of the **State 2 Pending Approval** state in the workflow:

Workflow State

Save | Cancel | Change ID | Actions

WORKFLOW
Estimate Approval

NAME *
State 2: Pending Approval

SCRIPT ID
workflowstate_est_pend_appr

DESCRIPTION

DO NOT EXIT WORKFLOW

START STATE

Actions • Transitions • Fields

Move To Top | Move To Bottom | New Action | New Group

EDIT	NAME	PARAMETERS	TRIGGER ON	EVENT TYPE	CONTEXT	CONDITION	FORMULA	SAVED SEARCH	DELAY
Edit	Add Button	Label: Approve	Before Record Load			Sales Rep : Supervisor = Current User			
Edit	Add Button	Label: Reject	Before Record Load			Sales Rep : Supervisor = Current User			
Edit	Lock Record		Before Record Load						

The configuration of the state shows that the **Approve** and **Reject** buttons are only added if the Supervisor for the sales rep views the Quote record. The buttons get added before the Quote record loads into the browser. In addition, the Lock Record action executes on the Before Record Load trigger, regardless of the user that views the record.

The following screenshot shows the workflow execution log for the **State 2 Pending Approval** state:

Workflow Log

WORKFLOW
Estimate Approval

START TIME
10/29/2014 - 15:24:57.799

STATE
State 2: Pending Approval

Show Rejected Actions/Transitions

Entry	Result	Date/Time
Running ONENTRY trigger under AFTERSUBMIT (Event: CREATE; Context: USERINTERFACE)		10/29/2014 - 15:24:57.822
Running BEFORELOAD trigger (Event: VIEW; Context: USERINTERFACE)		10/29/2014 - 15:24:59.978
ADDBUTTON: Approve [Condition: Sales Rep : Supervisor = Current User = F...	Considered	10/29/2014 - 15:24:59.990
ADDBUTTON: Reject [Condition: Sales Rep : Supervisor = Current User = FAL...	Considered	10/29/2014 - 15:25:00.031
LOCKRECORD	Executed	10/29/2014 - 15:25:00.059
Running BEFORELOAD trigger (Event: VIEW; Context: USERINTERFACE)		10/29/2014 - 15:28:41.234
ADDBUTTON: Approve	Executed	10/29/2014 - 15:28:41.247
ADDBUTTON: Reject	Executed	10/29/2014 - 15:28:41.289
LOCKRECORD	Executed	10/29/2014 - 15:28:41.335
Running BEFORELOAD trigger (Event: VIEW; Context: USERINTERFACE)		10/29/2014 - 15:29:29.212
ADDBUTTON: Approve	Executed	10/29/2014 - 15:29:29.262
ADDBUTTON: Reject	Executed	10/29/2014 - 15:29:29.329
LOCKRECORD	Executed	10/29/2014 - 15:29:29.376
Running BEFORELOAD trigger (Event: VIEW; Context: USERINTERFACE)		10/29/2014 - 15:31:21.437
ADDBUTTON: Approve [Condition: Sales Rep : Supervisor = Current User = F...	Considered	10/29/2014 - 15:31:21.456
ADDBUTTON: Reject [Condition: Sales Rep : Supervisor = Current User = FAL...	Considered	10/29/2014 - 15:31:22.387
LOCKRECORD	Executed	10/29/2014 - 15:31:22.445

The workflow execution shows that the user created the quote and the record transitioned to State 2: Pending Approval on an After Record Submit trigger. The subsequent Before Record Load triggers show each time the record is accessed. The first view is by the user, so the Add Button actions don't run. Only when the supervisor accesses the record do the Add Button actions run. The log shows that the supervisor viewed the record twice, then the user accessed it, because the buttons weren't added.

SuiteFlow Best Practices

Consider applying the following best practices to optimize your workflow performance:

- Combine multiple workflows that have the same logic and functions into a single workflow.
- Filter workflow execution by execution context and event type.
- Convert scheduled workflows that operate on records with static data or data that doesn't change often to event-based workflows instead. This way, the workflows don't run on the records unnecessarily.
- Consider the most appropriate workflow execution context for your workflow. The workflow execution context specifies how and when a workflow is triggered to run. If you don't use the appropriate context, workflows run when they shouldn't and result in unexpected errors. For more information, see the help topic Execution Contexts.

Ordering Workflows

Workflows generally process in the order that they were created in, but you shouldn't rely on this order when you want to synchronize workflows.

Consider applying the following best practices when you need workflows to run in a specific order:

- Create a primary workflow that runs other workflows. For example, if you want workflow A to run before workflow B, you create workflow C and set it to initiate workflow A. When workflow A is finished executing, you can set workflow C to initiate workflow B.
- You can synchronize workflows by creating a workflow and configuring it to initiate another workflow as the last action. For example, you can create workflow A and set it to initiate workflow B as the last action in workflow A.

  Important: If you're initiating a workflow from a different workflow, you need to set the release status of the workflow being initiated to **Not Initiating**. You need to always exempt the child workflow from the usual initiation process because you're initiating the child workflow in the parent workflow. If you don't change the release status of the child workflow, your workflow won't run as expected. For more information about changing the release status of a workflow, see Release Status for Workflow Instances.

- Don't create interdependent workflows that initiate on user events. Doing so can create a logic loop between the workflows and the workflows won't process as expected.
- Test your workflows to make sure that they run in your intended order.

FAQ: SuiteFlow

Review the questions and answers below to learn more information about SuiteFlow. The questions and answers are ordered by topic in the following way:

- Questions About Email
- Questions About Fields
- Questions About Buttons
- Questions About Reports

- Questions About Errors
- Questions About Actions
- Questions About SuiteFlow Terminology

Questions About Email

The following FAQs describe issues related to SuiteFlow and email.

How do I send an email using SuiteFlow?

Use a delay on a transition to a state that contains a Send Email action or set a delay on the Send Email action itself. See Scheduling an Action, Scheduling a Transition, and Welcome Email Sent to Customers Three Days After First Order Workflow.

Can I include attachments in the Send Email action?

Yes, you can send attachments using the Send Email action. To send multiple attachments in one Send Email action, create a .zip file that includes all the files to send. See Send Email Action.

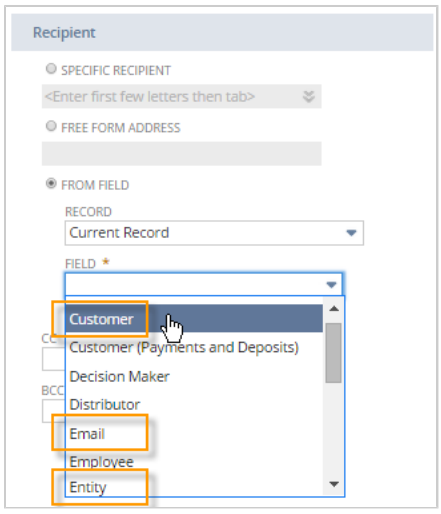
You can also send attachments by creating a custom action using SuiteScript. For more information, see Custom Action. In the custom action, send attachments with email.send(options) or email.sendBulk(options).

In the Send Email action, are Customer, Email, and Entity the same thing?

Yes. A workflow based on a Sales Order, or any other record type that specifies a customer can have the following three values available in the **Field** dropdown list:

- Customer
- Email
- Entity

In this case, for a Send Email action, each of these values reference the same object. If you choose Customer, Email, or Entity, NetSuite uses the email address associated with the customer:



Questions About Fields

The following FAQs describe issues related to fields and SuiteFlow.

How do I set field values using SuiteFlow?

Use the Set Field Value action. See Set Field Value Action.

How do I hide a field using SuiteFlow?

Use the Set Field Display Type action. See Set Field Display Type Action.

How do I make a field required using SuiteFlow?

Use the Set Field Mandatory action. See Set Field Required Action.

Can I set multiselect fields using SuiteFlow?

You can't set the value of multiselect fields for existing records, either with the Set Field Value action, or with the Send Email, Subscribe To Record, Create Record, Go To Record actions. You can set the value of multiselect fields for new records with Set Field Value.

You can also complete the following other tasks with multiselect fields:

- Change the display type. See Set Field Display Type Action.
- Change the UI label. See Set Field Display Label Action.
- Make the field required. See Set Field Required Action.

How do I set the value of a field based on the value a user set for another field?

Use the Set Field Value action to set the field value after a user edits a different field or set the field value after the user saves the record, depending on the trigger used with the Set Field Value action:

- To dynamically set the field value, use the After Field Edit trigger. See After Field Edit Trigger.
- To set the value after the user saves the record, use Before Record Submit or After Record Submit triggers. See Before Record Submit Trigger or After Record Submit Trigger.

For more information, see Set Field Value Action.

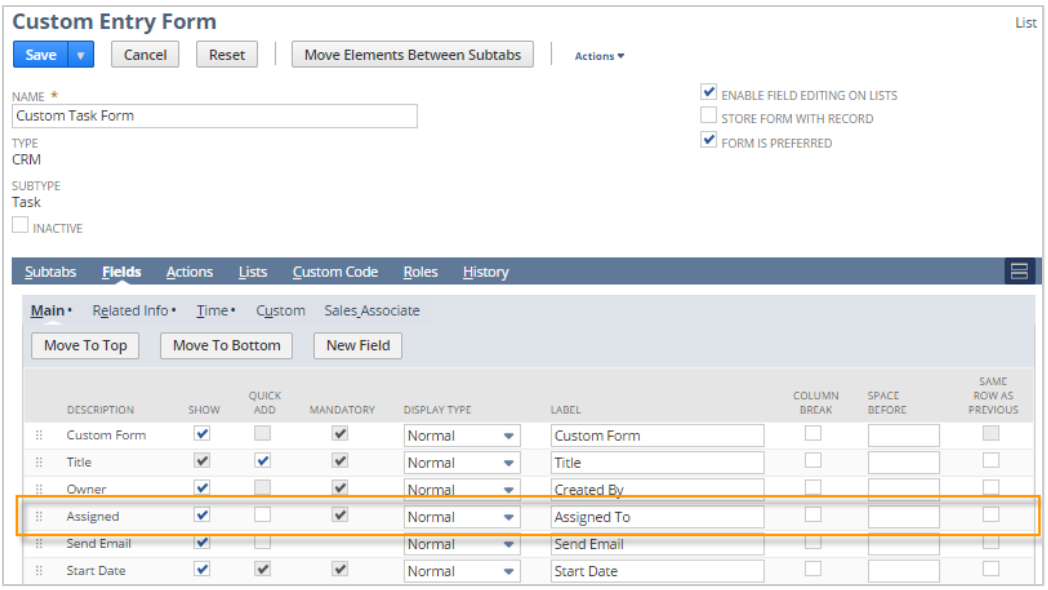
Field names in SuiteFlow dropdown lists are sometimes different than the names of fields that appear in the UI. For example, a field called 'Assigned' in NetSuite may be called 'Assigned To' in SuiteFlow. How do I know if the fields are the same?

View the form customization page for the record that contains the field names. On the form customization page, the **Description** column lists the field names that appear in SuiteFlow, and the **Label** column lists the names that appear in NetSuite.

For example, to access the field names for a Task record:

1. Go to Activities > Scheduling > Tasks > New.
2. In the **Customize** dropdown list, select **Customize Form**.
3. Click the **Fields** subtab.

   On the **Custom Entry Form** page, note the difference in the values between the **Description** column and the **Label** column for the **Assigned** field:



Can I access sublists and sublist fields in a workflow?

No. Sublists and their fields aren't accessible from a workflow. To manipulate a sublist in a workflow, create a custom action using a workflow action script. See the help topics N/workflow Module and Custom Action.

Questions About Buttons

The following FAQs describe issues related to buttons and SuiteFlow.

How do I use buttons to help users go to other records and pages in NetSuite?

Use the Add Button action with the Go To Page or Go To Record actions. See Using Buttons for Navigation.

How do I use buttons to transition the record in the workflow from one state to another?

Create the button with the Add Button action and then create a transition that executes on the click of the button. Approval routing workflows use this method to transition between states. See Using Buttons to Run Transitions.

Why do the buttons I have added to the record disappear when I refresh the browser?

Verify that the Add Button actions use the correct trigger for the **Trigger On** property. To properly add buttons to a record form, the trigger must almost always be Before Record Load.

If you use the Entry trigger for the Add Button action, the button is only added the first time a record enters a state. Any actions set to trigger on Entry don't run again if the record is reloaded during the time that it is in a state. Consequently, the Add Button action executed the first time that the record entered the state, but didn't run again when the record was reloaded. Then the button disappeared.

Use this same guideline with the Remove Button action. Use Before Record Load to make sure that the buttons are always removed, regardless of when and how a user accesses the record during the time that the record is in a specific state.

How do I create a button that, when clicked, navigates users to other records or pages in NetSuite?

See Using Buttons for Navigation. If you want to transition the record in the workflow from one state to another based on a user clicking a button, see Using Buttons to Run Transitions.

Questions About Reports

Can I generate reports to show which records are in a workflow and how long they have been in the workflow?

Yes. You can search for workflow definitions or workflow instances. Use a workflow search to get information such as which workflows are running, which workflows are inactive, which record types are used in workflows, which employees are using certain workflows, or which workflows came from a bundle installation. See Workflow Searches.

Questions About Errors

The following FAQs describe issues related to errors and SuiteFlow.

If an error occurs (through SuiteFlow or other means) on Before Record Submit, will the After Record Submit actions still be triggered?

No. If a system error occurs between the time a user clicks **Save** on a record and the time that the record is saved to the database, any action set to process on the After Record Submit trigger doesn't run.

Similarly, if a Return User Error action executes on a Before Record Submit trigger, then neither the After Record Submit actions or any unexecuted action on a Before Record Submit trigger don't run until the user resolves the issues with the record.

What do the 'Stack overflow on line <xxx>' or 'Too much recursion' errors mean?

These errors occur due to an infinite loop in a workflow. An infinite loop occurs when one operation triggers another operation, and then the second operation triggers the first again.

For example, a workflow uses a Set Field Value action on an After Field Edit trigger and the **Client Field** property in the action definition equal to a specific field on the record. If a user edits the field set for the **Client Field** property, an infinite loop results as the action is continually executed.

An example of an infinite loop in a workflow is a workflow for a purchase order record. The Employee field on a purchase order is dependent on Vendor record, and the list is restricted to employees that belong to the vendor subsidiary. Consequently, the Employee field reloads when a vendor is selected. To avoid this type of infinite loop, set the **Employee != Current User** condition as a workflow condition.

Questions About Actions

The following FAQs describe issues related to actions and SuiteFlow.

Can I copy a workflow?

Yes. Use the Make Copy command, available from the **More** menu on the workflow definition page. See Copying a Workflow.

Can a workflow kick off another workflow?

Yes. Use the Initiate Workflow action to start another workflow from within a parent workflow. When the child workflow completes, the record transitions to the next state in the parent workflow. See Initiate Workflow Action.

How do I create a child workflow?

First, create the parent and child workflows. Then, in the parent workflow, use the Initiate Workflow action to initiate the child workflow. See Creating a Workflow and Initiate Workflow Action.

Can a workflow run SuiteScript?

Yes. Create a workflow action script and then use a custom action to call the workflow action script. See the help topics SuiteScript 2.x Workflow Action Script Type and Custom Action.

Can workflows be bundled?

Yes. See Bundling a Workflow.

Can the workflow take some action if a record has been in a particular state too long, for example, if the business process is expired?

Yes. Set the Delay field on a transition. See Scheduling a Transition.

If I inactivate an action, will it also apply to records with currently active workflow instances?

Yes, if you inactivate an action, then the action no longer executes, even if an existing workflow instance is currently running.

Can I inactivate a transition?

No, you can't inactivate a transition.

The Payment Method field on transactions isn't being set. What's wrong?

If a workflow based on the Cash Sale, Customer Deposit, or Customer Payment transaction record types needs to set the **Payment Method** field, make sure the Set Field Value action triggers on the Before User Edit client trigger, instead of the Before Record Load server trigger.

The sourcing of the **Payment Method** field from the customer overrides the default value set by a workflow. Use the Before User Edit trigger to allow all fields to be sourced before the Set Field Value action sets the value of the field.

How do I run an action on records returned in a saved search?

Create a scheduled workflow to perform a saved search and initiate a workflow instance on each record returned by the saved search. See Scheduling a Workflow.

How do I send statements to customers?

For workflows with a base record type of Customer, use the Send Email action to send statements. For more information, see Attaching Statements to an Email and Attaching Transactions to an Email.

How do I send transactions in a workflow?

For workflows with a base record type of Customer, use the Send Email action to send other transactions. For more information, see Attaching Statements to an Email and Attaching Transactions to an Email.

When I use the Go To Record action in my workflow, why are some of the fields not automatically populated as expected?

If you create a workflow that includes a Go To Record action that sources some field values, the related fields on the new record might not populate automatically. For example, if you have a workflow that runs

on the Task record and automatically populates the Vendor field on Purchase Order records (action A), the system should automatically set the subsidiary based on the subsidiary for the vendor (action B). If you use the Go To Record action in this workflow example, the Go To Record action completes action A but doesn't complete action B and the subsidiary field on the Purchase Order is left blank. This is a known behavior associated with the Before Record Load trigger of a new record.

To workaround this issue, you need to do the following:

1. Create a custom List/Record field with Vendor set as the target record type. Apply this field to the Purchase order record. You can hide this custom field to avoid confusion.
2. Create a new auxiliary workflow that executes on the Purchase order record with the On Create initiation type and the Before Record Load trigger.
3. To populate the Vendor field on Purchase orders, including the subsidiary information, add the Set Field Value action to your workflow. Set the trigger to Before User Edit. If necessary, you can add conditions that determine when the subsidiary information is populated. The Set Field Value action should populate the Vendor field on Purchase Order with the value contained in the field we created in step 1.
4. In your original workflow, edit the Go To Record action so that it populates the field you created in step 1, instead of populating the Vendor field directly.

Now, when the original workflow initiates the Go To Record action, the Vendor field and related fields will be populated automatically.

For more information, see Set Field Value Action.

In my approval routing workflow, why is my 'next approver' not being set?

If employees use the **Employee Center** to access records in a workflow, issues with the **Next Approver** field may occur. Setting a **Next Approver** field requires workflow access to data from a related record, usually the Employee record type.

Most users don't have access to other employee records. Consequently, since the workflow runs with the current user permissions, the workflow can't access the record types required to properly set the field value. This issue can occur with other record types, for examples, purchase orders.

To resolve this issue, you can enable the **Execute As Admin** property on the workflow definition page. This provides users access to all records in NetSuite and enables the **Next Approver** fields to be set accordingly.

For more information about this property, see Execute as Admin for Workflow Instances.

How do I create a time-based action? For example, how do I send an email two days after a record has entered a state in the workflow?

Use a delay on a transition to a state that contains a Send Email action or set a delay on the Send Email action itself. See Scheduling an Action, Scheduling a Transition, and Welcome Email Sent to Customers Three Days After First Order Workflow.

Questions About SuiteFlow Terminology

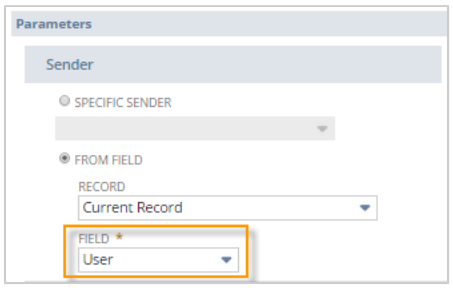
The following FAQs describe issues related to SuiteFlow terminology.

In SuiteFlow, is 'user' the same thing as 'employee?'

Yes. In SuiteFlow, the term user dynamically defines whoever performed the action that caused a workflow instance to initiate on a record. A user can be an employee, the employee's supervisor, or any other user who performs the action in NetSuite that initiates a workflow instance.

For example, in one state of a workflow, the user might be the employee filling out a travel request. In another state, the user might be the employee's supervisor, who must open the travel request to approve or reject.

The following screenshot shows a Send Email action. In this example, the user in the **From Field** is the user who is currently working with the record, indicated by the **Current Record** value of the **Record** dropdown list.



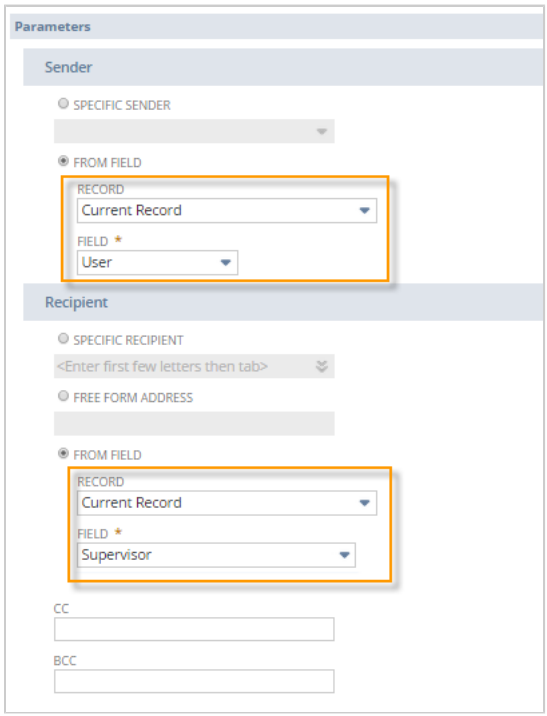
What does 'Current Record' mean in SuiteFlow?

The **Current Record** value in the Workflow Manager represents the record in a workflow and the corresponding record values. For example, a user creates a purchase order record and a workflow instance initiates on the purchase order. Use the **Current Record** value to access the values of the purchase order properties in a workflow definition.

The value of the **Current Record** can change dynamically, depending on the user that accesses a record during the time that the record is in a workflow.

Send Email Action Example

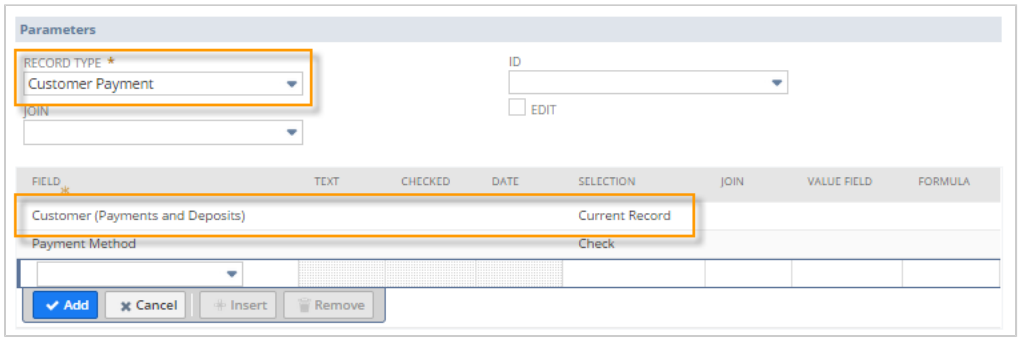
The following screenshot shows a Send Email action for a purchase order. In the **Sender** and **Recipient** sections, the **User** and **Supervisor** values for **Current Record** represent the user currently accessing the purchase order record and the supervisor for that employee, respectively.



Go To Record Action Example

You can also use the **Current Record** values to populate the fields in another record. For example, in a workflow for a Customer record, you use a Go To Record action to create a Customer Payment record. You can use the values on the current Customer record to populate the fields on the new record.

The following screenshot shows the **Parameters** section of a Go To Record action. The **Customer (Payments and Deposits)** field on the Customer Payment record is populated with the value of the Customer entity on the current record.



What is the trigger execution model in SuiteFlow?

For a complete discussion of the SuiteFlow trigger execution model, see the following topics:

- Workflow Triggers and SuiteFlow Trigger Execution Model
- Action Triggers
- Transition Triggers
- Triggers Reference.

Workflow Samples

- Lead Nurturing Workflow
- Lead that Did Not Convert to Customer Within Three Days
- Estimate Approval Routing Workflow
- Welcome Email Sent to Customers Three Days After First Order Workflow
- Storing a Return Value from a Custom Action Script in a Workflow Field

Lead Nurturing Workflow

The following sample workflow details a lead nurturing campaign created by the fictional company Wolfe Electronics. The Wolfe Electronics marketing department designed this campaign and workflow to market their security software.

The workflow executes the following basic steps after a lead is created in NetSuite, if the lead is part of the software industry:

1. Send an invitation to a webinar. The workflow sends the lead an invitation to a webinar titled "Trends in Internet Security", with a link to an online registration form.

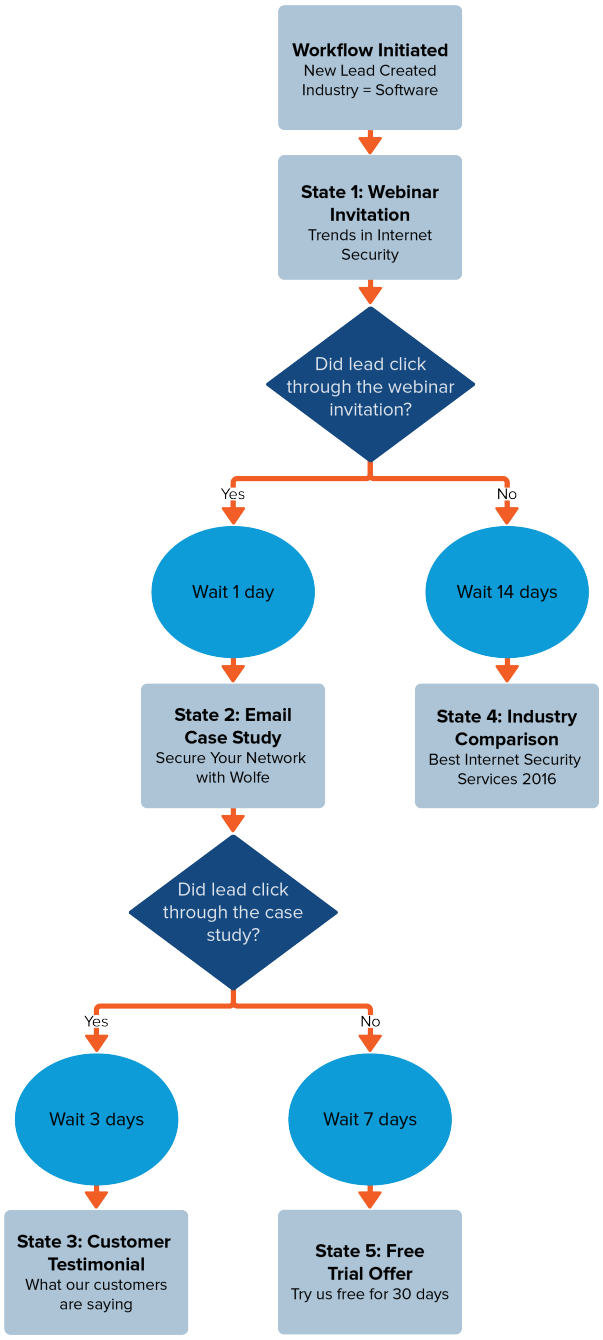
   If the lead does not respond to the webinar invitation in 14 days, the workflow sends an email message titled "Best Internet Security Services of 2014" and the workflow completes.

   If the lead responds to the webinar invitation, the workflow waits one day and proceeds to the next step.
2. Email a case study. The workflow sends an email with link to a case study that describes Wolfe Electronics security offerings.

   If the lead does not click through to the case study, the workflow sends an email 7 days later with a free trial offer and the workflow completes.

   If the lead clicks through to the case study, the workflow waits 3 days and proceeds to the next step.
3. Email a customer testimonial. The workflow sends an email with a customer testimonial and the workflow completes.

The following diagram shows the lead nurturing workflow for Wolfe Electronics:



Steps to Complete the Lead Nurturing Workflow

The following table lists the steps required to complete the lead nurturing workflow:

Step	Description
Designing the Lead Nurturing Workflow	Review the workflow requirements, including the summary of the lead nurturing campaign, workflow definition properties, states, actions, and transitions.
Before You Build the Lead Nurturing Workflow	Create the required marketing templates, lead nurturing campaign record, and Industry custom field to store the recipient of the lead nurturing campaign.

Step	Description
Building the Lead Nurturing Workflow	Create the states and the actions and transitions for each state.
Testing the Lead Nurturing Workflow	Review the steps necessary to test the workflow and then release the workflow.

Note: For more information about the elements of a workflow, see Workflow Elements.

Designing the Lead Nurturing Workflow

Before building a workflow, determine the required workflow states for the campaign. The lead nurturing campaign for Wolfe Electronics requires one state for each lead nurturing campaign event.

Lead Nurturing Campaign Summary

The lead nurturing workflow uses the following workflow definition properties:

Property	Value
Record Type	Customer
Sub Types	Lead
Release Status	Testing*
Initiation	Event Based
Trigger Type	After Record Submit
* Use **Testing** until the workflow is ready for production, then set it to **Released**.	

The following table describes the states and the required actions and transitions:

State	Actions	Transitions
State 1 Webinar Invitation	▪ Send Campaign Email: Email a webinar invitation ▪ Subscribe To Record: Track response to the email	Transitions to the following states: ▪ **State 1a Wait 1 day** if the campaign response is **Clicked Through**. ▪ **State 4 Industry Comparison** if the campaign is not responded to after 14 days. ▪ **State 6 Exit** if the lead status is **Closed Won**.
State 1a Wait 1 day	There are no actions for this state.	Transitions to the following state: ▪ **State 2 Email Case Study**
State 2 Email Case Study	▪ Send Campaign Email: Email a case study	Transitions to the following states: ▪ **State 2a Wait 3 days** if the campaign response is **Clicked Through**. ▪ **State 5 Free Trial Offer** if the campaign is not responded to after 14 days

State	Actions	Transitions
		▪ **State 6 Exit** if the lead status is **Closed Won**.
State 2a Wait 3 days	There are no actions for this state.	Transitions to the following state: ▪ **State 3 Customer Testimonia** l
State 3 Customer Testimonial	▪ Send Campaign Email: Email a customer testimonial	Transitions to the following states: ▪ **State 6 Exit** if the lead status is **Closed Won**.
State 4 Industry Comparison	▪ Send Campaign Email: Email an industry comparison	—
State 5 Free Trial Offer	▪ Send Campaign Email: Email a free 30 day trial	—
State 6 Exit	—	—

Next Step: To begin with the lead nurturing workflow example, go to Before You Build the Lead Nurturing Workflow.

Before You Build the Lead Nurturing Workflow

Before you begin building the lead nurturing workflow, complete the following tasks:

- Create the Marketing Templates
- Create the Lead Nurturing Campaign Record and Campaign Events
- Create the Industry Custom Field

Create the Marketing Templates

The lead nurturing workflow uses the Send Campaign Email action to send marketing materials to the customer for the Lead record. Create the templates required by the Send Campaign Email actions.

To create the marketing templates:

1. Go to Lists > Marketing > Marketing Templates > New.
2. Click **Campaign** and then select a template layout.
3. Enter the following properties:

Property	Value
Name	Webinar Invitation
Subject	Trends in Internet Security

4. Upload a template file or enter the template text directly in the Text Editor.
5. On the **Marketing** subtab, select from and reply email addresses, and choose an optional campaign domain.
6. Click **Save**.
7. Repeat the above steps to create the following templates:

Template Name	Subject
Email Case Study	Secure your network with Wolfe Electronics
Customer Testimonial	What our customers are saying
Industry Comparison	Best Internet Security Services 2014
Free Trial Offer	Try us free for 30 days

Create the Lead Nurturing Campaign Record and Campaign Events

Campaign records are used to manage all the information that is important to your marketing efforts. On campaign records, you can create events to represent different parts of the same campaign. When you create the Send Campaign Email actions, you also select the campaign event associated to the email. See the help topic Managing Campaigns.

To create the lead nurturing campaign record and campaign events:

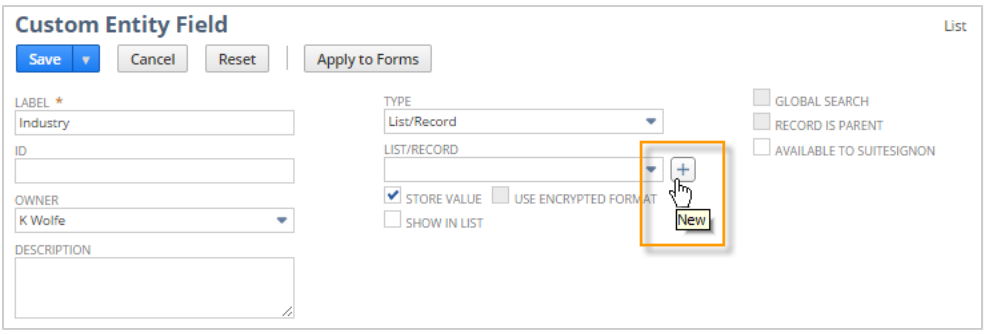
1. Go to Lists > Marketing > Marketing Campaigns > New.
2. In the **Title** field, enter **New Lead Nurturing**.
3. Click the **Lead Nurturing** subtab.
4. In the **Template** column, choose **Webinar Invitation**.
5. If you use the Subscription Categories feature, select a **Subscription** category.
6. Click **Add**.
7. Repeat steps 4 to 6 to add the following templates:
   - Email Case Study
   - Customer Testimonial
   - Industry Comparison
   - Free Trial Offer
8. Click **Save**.

Create the Industry Custom Field

The lead nurturing workflow is designed to send campaign emails to Lead records in the software industry. Create a custom entity field and add it to the Customer record. When a user enters a lead in NetSuite, the user specifies the Industry field and the workflow initiates if the field value is **Software**. For more information about entity fields, see the help topic Creating Custom Entity Fields.

To create the Industry custom field:

1. Go to Customization > Lists, Records, & Fields > Entity Fields > New.
2. In the **Label** field, enter **Industry**.
3. In the **Type** field, select **List/Record**.
4. Next to the **List/Record** field, click **New**.



5. On the **Custom List** page, enter the following properties:

Property	Value
Name	Industry Types
Value	Software

6. Click **Add** and then click **Save**.
7. On the **Custom Entity Field** page, click the **Applies To** subtab, and check the **Customer** box.
8. Click **Save**.

Next Step: To continue with the lead nurturing workflow example, go to Building the Lead Nurturing Workflow.

Building the Lead Nurturing Workflow

To build the lead nurturing workflow, complete the following tasks:

- Create the Workflow Definition
- Create the Workflow Fields

Important: If you have not already done so, complete the prerequisite tasks before you begin this step for the lead nurturing workflow. See Before You Build the Lead Nurturing Workflow.

Create the Workflow Definition

Create the workflow definition and define the basic workflow properties, the workflow initiation, and the workflow initiation condition. The workflow should only initiate after a user saves a new Lead record with an **Industry Type** of **Software**.

To create the workflow definition and define when the workflow initiates:

1. Go to Customization > Workslows > Workflow > New.
2. On the **New Workflow** page, enter the following properties:

Section	Property Name	Value
Basic Information	Name	Lead Nurturing

Section	Property Name	Value
	Record Type	Customer
	Sub Types	Lead
	Release Status	Testing
Initiation	Event Based	checked
Event Definition	On Create	checked
	On View or Update	unchecked
	Trigger Type	After Record Submit

3. In the **Event Definition** section, select **Visual Builder** and click the **Open** icon to open the Condition Builder.
4. In the **Workflow Condition** window, enter the condition properties in the following columns:

Column Name	Value
Field	Industry
Compare Type	any of
Selection	Software

5. Click **Add**.
6. Click **Save** to save the condition.
7. Click **Save** to save the workflow definition.

Create the Workflow Fields

The workflow runs actions in its states based on how each recipient reacts to the lead nurturing campaign events. The workflow relies on workflow fields tied to campaign event responses to figure out which actions and transitions to run. You need to create two workflow fields: `Webinar.Response` and `CaseStudy.Response`.

For more information, see Workflow Custom Fields.

To create the campaign response workflow fields:

1. Make sure the Lead Nurturing workflow is open, created in Create the Workflow Definition.
2. In the context panel, click the **Workflow** tab, click the **Fields** view, and then click **New Workflow Field**
3. On the **Workflow Field** window, enter the following properties:

Property	Description
Label	Webinar.Response
Type	List/Record
List/Record	Campaign Response
Store Value	Checked

4. Click **Save**.
5. Repeat the above steps to create another field with the label **CaseStudy.Response**.

Next Step: To continue with the lead nurturing workflow example, go to Creating States for the Lead Nurturing Workflow.

Creating States for the Lead Nurturing Workflow

After you create the workflow definition, next create a workflow state for each of the five events in the lead nurturing campaign and an exit state for leads whose records are closed at any point in the workflow. After you create the states, create transitions and then set up each state by creating the actions and setting up the transitions.

To create states for each campaign event:

1. Make sure the Lead Nurturing workflow is open from the step Building the Lead Nurturing Workflow.
2. In the workflow diagrammer, click **New State**.

   A new state appears in the diagrammer.
3. Select the state in the diagrammer and click the **Edit** icon on the **State** tab in the context panel.
4. In the **Name** field, enter **State 1: Webinar Invitation**.
5. Repeat the above steps to create states for the campaign events in the workflow and the exit state:
   - State 1a Wait for 1 day
   - State 2 Email Case Study
   - State 2a Wait for 3 days
   - State 3 Customer Testimonial
   - State 4 Industry Comparison
   - State 5 Free Trial Offer
   - State 6 Exit

   Note: State 6 Exit does not have a section in this sample. It has no actions or transitions because it is the end of the workflow. For more information, see Exit States

Next Step: To continue with the lead nurturing workflow example, go to Creating Transitions for the Lead Nurturing Workflow.

Creating Transitions for the Lead Nurturing Workflow

Transitions define the next step in the workflow for each state. You can create transitions by clicking and dragging in the workflow diagrammer between two states. The diagrammer indicates exit states with the **End** icon.

To create the transitions:

1. Make sure the Lead Nurturing workflow is open from the step Creating States for the Lead Nurturing Workflow.
2. In the diagrammer, hover over the bottom of the **State 1 Webinar Invitation**. The icon becomes a filled half-circle.

3. Drag the icon to the **State 6 Exit**.
4. Release the mouse to create the transition.
5. Repeat the above steps to create the following transitions:

From State	To State
State 1 Webinar Invitation	State 4 Industry Comparison
State 1 Webinar Invitation	State 1a Wait 1 day
State 1a Wait 1 day	State 2 Email Case Study
State 2 Email Case Study	State 6 Exit
State 2 Email Case Study	State 2a Wait 3 days
State 2a Wait 3 days	State 3 Customer Testimonial
State 2 Email Case Study	State 5 Free Trial Offer
State 3 Customer Testimonial	State 6 Exit

Note: The order in which you create the transitions matters. Create the transitions to **State 6 Exit** first, as they are listed on the **Transitions** tab for the state in the order that they are added and process in that order.

Next Step: To continue with the lead nurturing workflow example, go to State 1 Webinar Invitation.

State 1 Webinar Invitation

After you're done creating the states and transitions, you're ready to set up **State 1 Webinar Invitation**. This state marks the start of the workflow, where the first email goes out to leads in the software industry. To set up State 1, you're creating a Send Campaign Email action and a Subscribe To Record action, and you're setting up the transitions. After you create the states and transitions, you can set up **State 1 Webinar Invitation**. This state is the point in the workflow where the workflow initiates and the initial email is sent to leads in the software industry. To set up State 1, create a Send Campaign Email action and a Subscribe To Record action and set up the transitions.

To set up State 1 Webinar Invitation:

1. Make sure the Lead Nurturing workflow is open from the step Creating Transitions for the Lead Nurturing Workflow.
2. Select **State 1 Webinar Invitation** in the diagrammer.
3. To create the Send Campaign Email action:
   a. Click **New Action** on the **State** tab in the context panel.
   b. Click **Send Campaign Email** in the **New Action** window.
   c. Enter the following properties:

Property	Value
Transition On	Entry
Recipient	Send To Current Record
Campaign Event	New Lead Nurturing : Trends in Internet Security
Store Result In	Webinar.Response (Workflow)

d. Click **Save**.

Since the lead nurturing workflow determines which template to send based on campaign response, subscribe to the campaign response field for the webinar. This way the workflow instance on the lead record triggers each time the campaign response changes.

4. To create the Subscribe To Record action for the campaign response:
   a. Click **New Action** on the **State** tab in the context panel.
   b. Click **Subscribe To Record** in the **New Action** window.
   c. In the **Field** dropdown list, select **Webinar.Response**.
   d. Click **Save**.

   If the lead's record is closed during this workflow, it leaves the workflow and does not receive further email. Each non-exit state in the workflow has a transition to the exit state.

5. To set up the transition to **State 6 Exit**:
   a. In the diagrammer, double-click the transition from **State 1 Webinar Invitation** to **State 6 Exit**.
   b. In the **Workflow Transition** window, select **Visual Builder** and click the **Open** icon to open the Condition Builder.
   c. In the **Workflow Condition** window, enter the following condition properties:

Column Name	Value
Field	Status
Compare Type	any of
Selection	Closed Won

   d. Click **Add**.
   e. Click **Save** to save the condition.

   If the lead clicks on a link in the Webinar Invitation, they move to **State 1a Wait for 1 day** where they will wait for 1 day before moving to **State 2 Email Case Study**.

6. To set up the transition to **State 2 Email Case Study**:
   a. In the diagrammer, double-click the transition from **State 1 Webinar Invitation** to **State 1a Wait 1 day**.
   b. In the **Workflow Transition** window, select **Visual Builder**, click the **Open** icon to open the Condition Builder, and create a condition with the following properties:

Column Name	Value
Record	Webinar.Response
Field	Response
Compare Type	any of
Selection	Clicked Through

   c. Click **Add**.
   d. Click **Save** to save the condition.

7. Click **Save** to save the transition.

   If the lead does not click on a link in the Webinar Invitation, the record moves to State 4 two weeks later.

8. To set up the transition to **State 4 Industry Comparison**:

a. In the diagrammer, double-click the transition from **State 1 Webinar Invitation** to **State 4 Industry Comparison**.
b. In the **Workflow Transition** window, set the following properties:

Property	Value
Transition On	Scheduled
Delay	14
Unit	Day

9. Click **Save** to save the changes to the transition.

Next Step: To continue with the lead nurturing workflow example, go to State 1a Wait for 1 day.

State 1a Wait for 1 day

After you set up **State 1 Webinar invitation**, set up **State 1a Wait for 1 day**. This state acts as a placeholder for the workflow during the time that it waits 1 day before it emails the case study. There are no actions associated with the state.

To set up State 1a Wait for 1 day:

1. Make sure the Lead Nurturing Workflow is open from State 1 Webinar Invitation.
2. Select the transition from **State 1 Webinar Invitation** to **State 1a Wait for 1 day** in the diagrammer.
3. In the **Workflow Transition** window, set the following properties:

Property	Value
Transition On	Scheduled
Delay	1
Unit	Day

4. Click **Save**.

Next Step: To continue with the lead nurturing workflow example, go to State 2 Email Case Study.

State 2 Email Case Study

After you set up **State 1a Wait 1 day**, set up **State 2 Email Case Study**. If a lead clicked through the webinar invitation, this state sends an email with a case study to the lead. To set up State 2, create a Send Campaign Email action and a Subscribe To Record action and set up the transitions.

To set up State 2 Email Case Study:

1. Make sure the Lead Nurturing workflow is open from the step State 1a Wait for 1 day.
2. Select **State 2 Email Case Study** in the diagrammer.
3. To create the Send Campaign Email action:
   a. Click **New Action** on the **State** tab in the context panel.
   b. Click **Send Campaign Email** in the **New Action** window.
   c. Enter the following properties:

Property	Value
Trigger On	Entry
Recipient	Send To Current Record
Campaign Event	New Lead Nurturing : Secure your network with Wolfe Electronics
Store Result In	CaseStudy.Response (Workflow)

d. Click **Save**.

Since the lead nurturing workflow determines which template to send based on campaign response, subscribe to the campaign response field for the case study.

4. To create the Subscribe To Record action for the campaign response:
   a. Click **New Action** on the **State** tab in the context panel.
   b. Click **Subscribe To Record** in the **New Action** window.
   c. In the **Field** dropdown list, select **CaseStudy.Response (Workflow)**.
   d. Click **Save**.
5. To set up the transition to **State 6 Exit**:
   a. In the diagrammer, double-click the transition from **State 2 Email Case Study** to **State 6 Exit**.
   b. In the **Workflow Transition** window, select **Visual Builder** and click the **Open** icon to open the Condition Builder.
   c. In the **Workflow Condition** window, enter the following condition properties:

Column Name	Value
Field	Status
Compare Type	any of
Selection	Closed Won

   d. Click **Add**.
   e. Click **Save** to save the condition.
6. Click **Save** to save the transition.

   If the lead clicks on a link in the Case Study, they move to **State 2a Wait 3 days** where they will wait 3 days before moving to **Step 3 Customer Testimonial**.
7. To set up the transition to **State 2a Wait 3 days**:
   a. In the diagrammer, double-click the transition from **State 2 Webinar Invitation** to **State 2a Wait for 3 days**.
   b. Select **Visual Builder**, click the **Open** icon to open the Condition Builder, and create a condition with the following properties:

Column Name	Value
Record	CaseStudy.Response (Workflow)
Field	Response Type
Compare Type	any of
Selection	Clicked Through

   c. Click **Add**.

   d. Click **Save** to save the condition.

8. Click **Save** to save the transition.

   If the lead does not click on the link in the case study, the record moves to **State 5 Free Trial Offer** seven days later.

9. To set up the transition to **State 5 Free Trial Offer**:

   a. In the diagrammer, double-click the transition from **State 2 Email Case Study** to **State 5 Free Trial Offer**.

   b. In the **Workflow Transition** window, set the following properties:

Property	Value
Transition On	Scheduled
Delay	7
Unit	Day

   c. Select **Visual Builder** , click the **Open** icon to open the Condition Builder, and create a condition with the following properties:

Column Name	Value
Record	CaseStudy.Response (Workflow)
Field	Response Type
Compare Type	any of
Selection	Received, Sent

   d. Click **Add**.

   e. Click **Save** to save the condition.

10. Click **Save** to save the changes to the transition.

Next Step: To continue with the lead nurturing workflow example, go to State 2a Wait for 3 days.

State 2a Wait for 3 days

After you set up **State 2 Webinar invitation**, set up **State 2a Wait for 3 days**. This state acts as a placeholder for the workflow during the time that it waits 3 days before it emails the customer testimonial. There are no actions associated with the state.

To set up State 2a Wait for 3 days:

1. Make sure the Lead Nurturing workflow is open from the step State 2a Wait for 3 days.
2. Select the transition from **State 2 Email Case Study** to **Step 2a Wait for 3 days**.
3. In the **Workflow Transition** window, set the following properties:

Property	Value
Trigger On	Schedule
Delay	3
Unit	Day

4. Click **Save**.

Next Step: To continue with the lead nurturing workflow example, go to State 3 Customer Testimonial.

State 3 Customer Testimonial

After you set up **State 2 Email Case Study**, set up **State 3 Customer Testimonial**. If a lead clicked through the case study sent in State 2, this state sends an email with a customer testimonial to the lead. To set up State 3, create a Send Campaign Email action.

To set up State 3 Customer Testimonial:

1. Make sure the Lead Nurturing workflow is open from the step State 2 Email Case Study.
2. Select **State 3 Customer Testimonial** in the diagrammer.
3. To create the Send Campaign Email action:
   a. Click **New Action** on the **State** tab in the context panel.
   b. Click **Send Campaign Email** in the **New Action** window.
   c. Enter the following properties:

Property	Value
Trigger On	Entry
Recipient	Send To Current Record
Campaign Event	New Lead Nurturing : What our customers are saying

   d. Click **Save**.

Next Step: To continue with the lead nurturing workflow example, go to State 4 Industry Comparison.

State 4 Industry Comparison

After you set up **State 3 Customer Testimonial**, set up **State 4 Industry Comparison**. If a lead did not click through the webinar invitation, this state sends an industry comparison email. To set up State 4, create a Send Campaign Email action.

To set up State 4 Industry Comparison:

1. Make sure the Lead Nurturing workflow is open from the step State 3 Customer Testimonial.
2. Select **State 4 Industry Comparison** in the diagrammer.
3. To create the Send Campaign Email action:
   a. Click **New Action** on the **State** tab in the context panel.
   b. Click **Send Campaign Email** in the **New Action** window.
   c. Enter the following properties:

Property	Value
Trigger On	Entry
Recipient	Send To Current Record
Campaign Event	New Lead Nurturing : Best Internet Security Services 2014

   d. Click **Save**.

Next Step: To continue with the lead nurturing workflow example, go to State 5 Free Trial Offer.

State 5 Free Trial Offer

After you set up **State 4 Industry Comparison**, set up **State 5 Free Trial Offer**. If a lead did not click through the case study, this state sends a free trial offer email. To set up State 5, create a Send Campaign Email action.

To set up State 5 Free Trial Offer:

1. Make sure the Lead Nurturing workflow is open from the step State 4 Industry Comparison.
2. Select **State 5 Free Trial Offer** in the diagrammer.
3. To create the Send Campaign Email action:
   a. Click **New Action** on the **State** tab in the context panel.
   b. Click **Send Campaign Email** in the **New Action** window.
   c. Enter the following properties:

Property	Value
Trigger On	Entry
Recipient	Send To Current Record
Campaign Event	New Lead Nurturing : Try us free for 30 days

   d. Click **Save**.

Next Step: Now that the workflow setup is complete, test and then release the workflow. To continue with the lead nurturing workflow example, go to Testing the Lead Nurturing Workflow.

Testing the Lead Nurturing Workflow

Before releasing your workflow, test the workflow to make sure it functions as designed.

After setting your workflow release status to Testing, test the following functionality:

- Test workflow initiation. Make sure the workflow initiates with a Lead record is created.
- Test conditions. Set up a testing scenario where you can verify that the conditions in States 1 and 2 can evaluate to both true and false. For more information, see Testing Workflow Conditions.
- Test actions and transitions. Make sure that the actions and transitions in each step appear in the workflow execution log and complete successfully. For more information, see Testing Actions and Transitions.
- Test scheduled transitions. To test the scheduled transitions in Steps 1a and 2a, set the smallest possible delay. For more information, see Testing Scheduled Actions and Transitions.
- Test Send Campaign Email actions. Use the workflow execution log to make sure that the Send Campaign Email actions in Steps 1, 2, 3, 4, and 5 send an email. For more information, see Testing a Send Email Action.

After you have tested the lead nurturing workflow, change the release status to **Released**. See Release Status for Workflow Instances.

Lead that Did Not Convert to Customer Within Three Days

The following sample shows how to create a workflow that notifies a sales rep if a Lead record did not convert to a Customer record within three days of Lead record creation.

The example uses a workflow field, **Lost Lead Email Sent**, on the lead record form to track if the sales rep was notified. A saved search identifies leads created three days before the current date. The workflow runs the saved search on a schedule and sends the email to the sales rep of the leads that have not been converted to customers in three days that meet the saved search criteria.

To set up the workflow, complete the following steps:

- Create the custom field for the Lead record. See Step 1 Create the Custom Entity Field for the Lead Record.
- Create the saved search. See Step 2 Create the Saved Search.
- Create and schedule the workflow. See Step 3 Create the Workflow and Set the Schedule.

Step 1 Create the Custom Entity Field for the Lead Record

Create a custom entity field for the Lead record form. The field tracks if the sales rep was notified of leads that did not convert. The workflow sets this field to true when the workflow sends the email. This field is set to false for all leads by default.

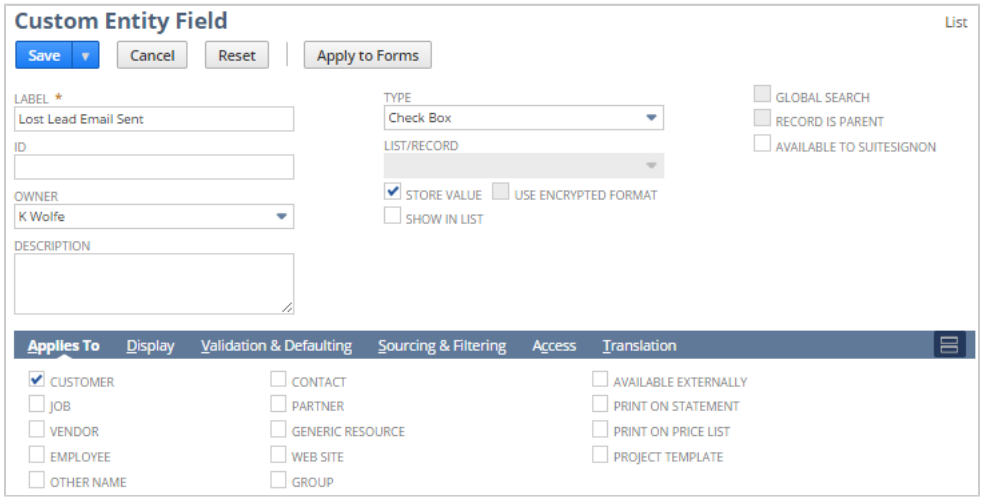
The saved search uses this field as search criteria, so you must create the field before you can create the saved search.

To create the custom entity field for the Lead record form:

1. Go to Customization > Lists, Records, & Fields > Entity Fields > New.
2. On the **New Custom Entity Field** page, enter the following properties:

Property	Value
Label	Lost Lead Email Sent
Type	Check Box

3. On the **Applies To** subtab, enable **Customer**.



4. Click **Save**.

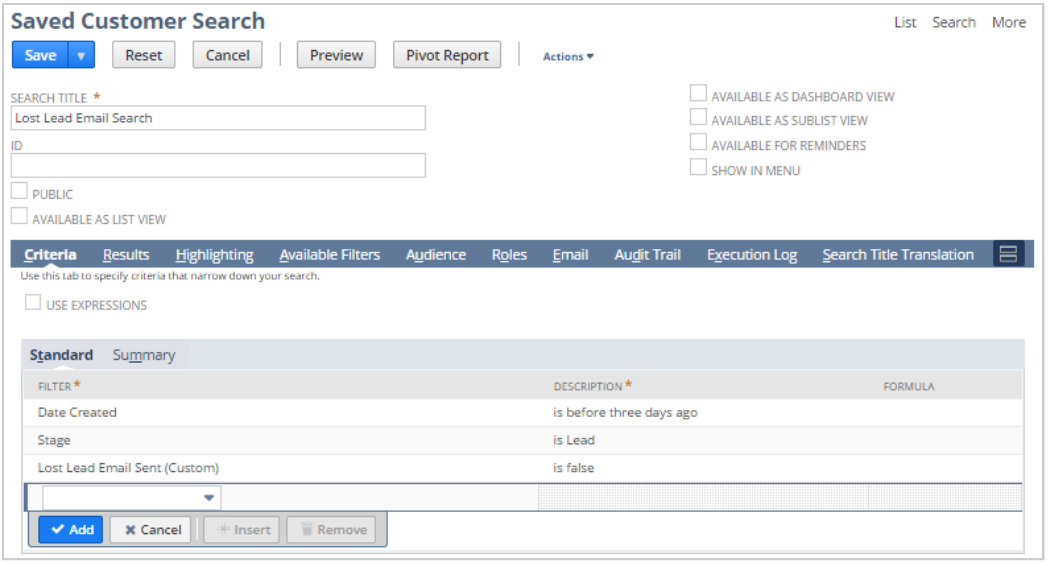
Step 2 Create the Saved Search

After you've completed Step 1, you can create a saved search to find lead records created more than three days ago with the **Lost Lead Email Sent** field equal to false.

To create the saved search:

1. Go to Lists > Search > Saved Searches > New.
2. On the **New Saved Search** page, click **Customer**.
3. In the **Search Title** field, enter **Lost Lead Email Search**.
4. On the **Criteria** tab, enter the following filter criteria in the **Filter** field:

Filter	Criteria
Date Created	**before** and **3 days ago**
Stage	**any of** and **Lead**
Lost Lead Email Sent (Custom)	No



5. Click **Save**.

Step 3 Create the Workflow and Set the Schedule

After you've completed Steps 1 and 2, create a workflow for the Lead record and set a schedule for the workflow. Create a single state with a Send Email action and a Set Field Value action for the **Lost Lead Email Sent** field on the Lead record.

To create the workflow and workflow actions:

1. Go to Customization > Workflow > Workflows > New.
2. On the **New Workflow** page, enter the following properties:

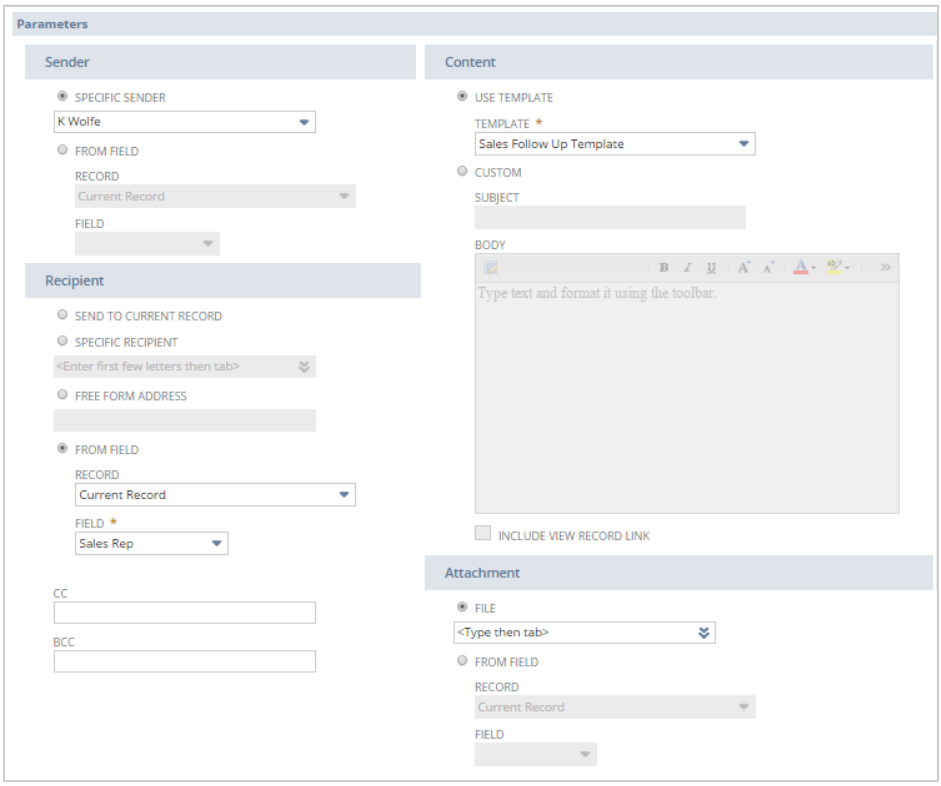
Section	Property Name	Value
Basic Information	Name	Lost Lead Workflow
	Record Type	Customer
	Sub Types	Lead
	Release Status	Released

Section	Property Name	Value
Initiation	Scheduled	checked
Schedule	Saved Search Filter	Lost Lead Email Search
	Repeat	check
	Frequency	Every 30 minutes

3. Click **Save**.
4. The workflow diagrammer, appears with one state.

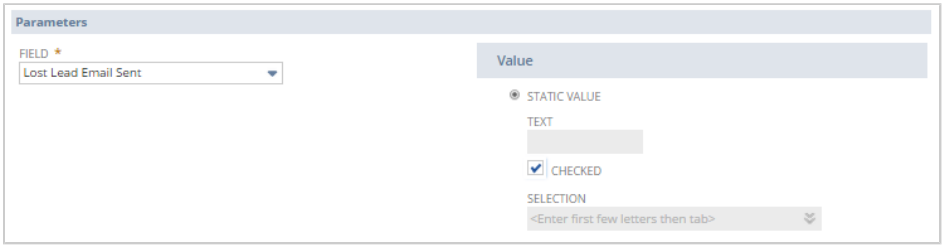
   Select the state in the diagrammer and click the **Edit** icon on the **State** tab in the context panel.
5. In the **Name** field, enter **Send Lost Lead Email**.
6. Click **Save**.
7. To create the Send Email action:
   a. Select the **Send Lost Sale Email** state in the diagrammer.
   b. Click **New Action** on the **State** tab in the context panel.
   c. Click **Send Email** in the **New Action** window.
   d. Enter the following properties:

Section	Property	Value
Sender	Specific Sender	Select a sender.
Recipient	From Field	Record: Current Record Field: Sales Rep
Content	Use Template	Select a template in the **Template** dropdown list.



   e. Accept the default values for the other properties and click **Save**.

8. To create a Set Field Value action to set the value of the **Lost Lead Email Sent** field on the lead record to true:
   a. Select the **Send Lost Sale Email** state in the diagrammer.
   b. Click **New Action** on the **State** tab in the context panel.
   c. Click **Set Field Value** in the **New Action** window.
   d. In the **Parameters** section, select **Lost Lead Email Sent** in the **Field** dropdown list.
   e. In the **Value** section, select **Static Value** and enable the **Checked** box.



   f. Accept the default values for the other properties and click **Save**.

Every 30 minutes the saved search runs. If the saved search returns records that match the criteria, NetSuite initiates a workflow instance on each record. The records enter the **Send Lost Sale Email** state and the Send Email action and Set Field Value actions run. The next time the saved search is run, the saved search will filter out the leads that have the **Lost Lead Email Sent** field set to true.

> **Note:** For more information about how NetSuite runs scheduled workflows, see Scheduled Trigger.

Estimate Approval Routing Workflow

The following sample workflow details approval routing used by the fictional company Wolfe Electronics. This workflow allows supervisors to approve or reject estimates entered by their sales reps.

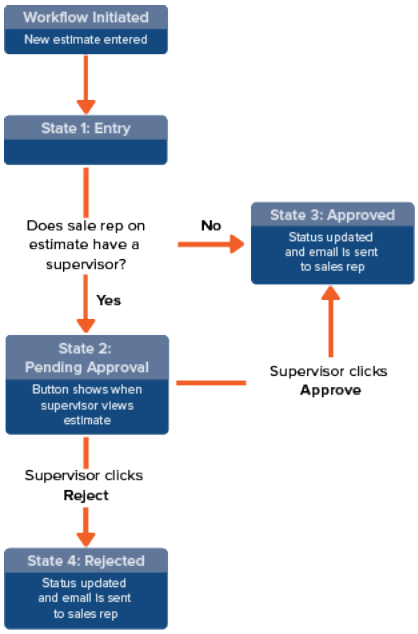
This workflow initiates when a sales rep creates a new estimate record and clicks **Save**. At this point, the estimate is checked to see if the sales rep identified on the estimate has a supervisor on his or her employee record.

The behavior of the workflow depends on the sales rep supervisor:

- Sales rep has a supervisor. The status of the estimate becomes Pending Approval. Buttons to approve or reject the estimate show when the sales rep supervisor views the estimate.

  If the supervisor clicks **Approve**, the status of the estimate becomes Approved and an email is sent to the sales rep. If the supervisor clicks **Reject**, the status of the estimate becomes Rejected and an email is sent to the sales rep.
- Sales rep does not have a supervisor. The status of the estimate becomes Approved and an email is sent to the sales rep.

The following diagram shows the Wolfe Electronics estimate approval workflow:



Steps to Complete the Estimate Approval Workflow

The following table lists the steps required to complete the estimate approval workflow:

Step	Description
Designing the Estimate Approval Routing Workflow	Review the workflow requirements, including the summary of the workflow definition properties, states, actions, and transitions.
Before You Build the Estimate Approval Routing Workflow	Create a custom field to store the approval status for the estimate.
Building the Estimate Approval Routing Workflow	Create the states and the actions and transitions for each state.
Testing the Estimate Approval Routing Workflow	Complete the steps necessary to test the workflow and then release the workflow.

Note: For more information about the elements of a workflow, see Workflow Elements.

Designing the Estimate Approval Routing Workflow

Before building the workflow, determine the workflow states required by estimate approvals. The Wolfe Electronics estimate approval workflow requires one state for each approval status.

Estimate Approval Routing Summary

The lead nurturing workflow uses the following workflow definition properties:

Property	Value
Record Type	Transaction

Property	Value
Sub Types	Estimate
Release Status	Testing*
Initiation	Event Based
Trigger Type	Before Record Submit
* Use **Testing** until the workflow is ready for production, then set it to **Released**.	

The following table describes the states and the required actions and transitions:

State	Actions	Transitions
State 1 Entry	▪ Set Field Value: Set the **Approval Status** field to **Pending Approval**	Transitions to the following states: ▪ **State 2 Pending Approval** if the estimate shows a default sales rep and that sales rep has a supervisor on their employee record. ▪ **State 3 Approved** if the estimate shows a default sales rep and that sales rep has no supervisor on their employee record..
State 2 Pending Approval	▪ Add Button: Add an **Approve** button ▪ Add Button: Add a **reject** button	Transitions to the following states: ▪ **State 3 Approved** if the supervisor clicks the **Approved** button. ▪ **State 4 Rejected** if the supervisor clicks the **Reject** button.
State 3 Approved	▪ Set Field Value: Set the **Approval Status** field to **Approved** ▪ Send Email: Send email to the sales rep	—
State 4 Rejected	▪ Set Field Value: Set the **Approval Status** field to **Reject** ▪ Send Email: Send email to the sales rep	—

Next Step: To begin with the estimate approval workflow example, go to Before You Build the Estimate Approval Routing Workflow.

Before You Build the Estimate Approval Routing Workflow

Before you begin building the workflow, you must first create the **Approval Status** custom field, required by the Set Field Value actions.

To create the Approval Status custom field:

1. Go to Customization > Lists, Records, & Fields > Transaction Body Fields > New.
2. On the Transaction Body Field page, enter the following properties:

Property	Value
Label	Approval Status

Property	Value
Type	List/Record
Applies To	Sale

3. Click the **New** button next to the **List/Record** field.
4. In the **Name** field of the **Custom Lists** page, enter **Approval Statuses**.
5. On the **Values** tab, enter each of the following values in the **Value** column and click **Add**:
   - Pending Approval
   - Approved
   - Rejected
6. Click **Save** to save the list.
7. Click **Save** to save the custom field.

   The **Approval Status** custom field appears as a dropdown list on the **Custom** subtab of Estimate records.

Next Step: To continue with the estimate approval workflow example, go to Building the Estimate Approval Routing Workflow.

Building the Estimate Approval Routing Workflow

Create the workflow definition and define the basic workflow properties and the workflow initiation properties. The workflow initiates after a user saves a new Estimate record and before NetSuite saves the record data to the database.

To create the workflow definition and define when the workflow initiates:

1. Go to Customization > Workflows > Workflow > New.
2. On the **New Workflow** page, enter the following properties:

Section	Property Name	Value
Basic Information	Name	Estimate Approval Routing
	Record Type	Transaction
	Sub Types	Quote
	Release Status	Testing
	Keep Instance and History	Always
Initiation	Event Based	selected
Event Definition	On Create	checked
	On View or Update	not checked
	Trigger Type	Before Record Submit

3. Click **Save** to save the workflow definition.

Next Step: To continue with the estimate approval workflow example, go to Creating States for the Estimate Approval Routing Workflow.

Creating States for the Estimate Approval Routing Workflow

After you create the workflow definition, create a workflow state for each of the four events in the estimate approval workflow. After you create the states, create transitions and add actions to the states.

To create states for each part of the approval process:

1. Make sure the Estimate Approval Routing workflow is open from the step Building the Estimate Approval Routing Workflow.
2. In the Workflow Diagrammer, double-click **State 1**.
3. In the **Name** field, enter **State 1 Entry**, and then click **Save**.
4. In the Workflow Diagrammer, click **New State**.
5. Double-click the new state.
6. In the **Name** field, enter **State 2 Pending Approval**, and then click **Save**.
7. Create two more states with the following values:
   - **State 3 Approved**
   - **State 4 Rejected**

Next Step: To continue with the estimate approval workflow example, go to Creating Transitions for the Estimate Approval Routing Workflow.

Creating Transitions for the Estimate Approval Routing Workflow

Transitions define the next step in the workflow for each state. In the Workflow Diagrammer, you can create transitions by clicking and dragging between two states. The **End** icon in the Workflow Diagrammer indicates exit states or where the record leaves the workflow.

To create the transitions:

1. Make sure the Estimate Approval Routing workflow is open from the step Creating States for the Estimate Approval Routing Workflow.
2. In the Workflow Diagrammer, hover over the bottom of the **State 1 Entry**. The icon becomes a filled semicircle.
3. Drag the icon onto **State 2 Pending Approval**.
4. Repeat steps 2 and 3 to create the following transitions:

From State	To State
State 1 Entry	State 3 Approved
State 2 Pending Approval	State 3 Approved
State 2 Pending Approval	State 4 Rejected

Note: The order in which you create the transitions matters. Transitions are listed on the Transitions tab in the order that they were added and process in that order. Create the transition from **State 1 Entry** to **State 2 Pending Approval** first.

Next Step: To continue with the estimate approval workflow example, go to State 1 Entry.

State 1 Entry

After you create the states and transitions, you can set up **State 1 Entry**. This state is the point in the workflow where the workflow sets the initial value of the **Approval Status** field and determines if the estimate requires approval. To set up State 1, create a Set Field Value action and set up the transitions.

To set up State 1 Entry:

1. Make sure the Estimate Approval Routing workflow is open from the step Creating Transitions for the Estimate Approval Routing Workflow.
2. To create the Set Field Value action, do the following:
   a. In the Workflow Diagrammer, click **State 1 Entry**.
   b. In the context panel, on the **State** tab, click **New Action**.
   c. In the **New Action** window, click **Set Field Value**.
   d. Enter the following properties:

Section	Property	Value
Basic Information	Trigger On	Entry
Parameters	Field	Approval Status
Value	Static Value	selected
	Selection	Pending Approval

   e. Click **Save**.
3. To set up the transition to **State 2 Pending Approval** if the sales rep for the estimate has a supervisor, do the following:
   a. In the Workflow Diagrammer, double-click the transition arrow from **State 1 Entry** to **State 2 Pending Approval**.
   b. In the **Workflow Transition** window, in the **Transition On** field, select **Entry**.
   c. In the Condition section, select **Visual Builder**.
   d. Click the **Open** icon to open the Condition Builder, and create a condition with the following properties:

Column Name	Value
Field	Supervisor
Compare Type	not empty

   e. Click **Add**, and then click **Save** to save the condition.
   f. Click **Save** to save the changes to the transition.
4. To set up the transition to **State 3 Approved** if the sales rep for the estimate has no supervisor, do the following:
   a. In the Workflow Diagrammer, double-click the transition arrow from **State 1 Entry** to **State 3 Approved**.
   b. In the **Workflow Transition** window, in the **Transition On** field, select **Entry**.
   c. Click **Save** to save the changes to the transition.

> **Note:** This transition does not need any additional logic, because if the transition to **State 2 Pending Approval** does not run, then the sales rep has no supervisor and this transition executes instead.

Next Step: To continue with the estimate approval workflow example, go to State 2 Pending Approval.

State 2 Pending Approval

After you set up **State 1 Entry** to determine which estimates require approval routing, set up **State 2 Pending Approval** to enable supervisors to approve or reject estimates. Create the two Add Button actions to add the **Approve** and **Reject** buttons. Then set up the transitions, which depend on which button is clicked when the supervisor views the record.

> **Note:** The **Approve** and **Reject** buttons only appear if the user viewing the record is the supervisor for the sales rep.

To set up State 2 Pending Approval:

1. Make sure the Estimate Approval Routing workflow is open from the step State 1 Entry.
2. To create the Add Button action for the **Approve** button, do the following:
   a. In the Workflow Diagrammer, click **State 2 Pending Approval**.
   b. In the context panel, on the **State** tab, click **New Action**.
   c. In the **New Action** window, click **Add Button**.
   d. In the **Basic Information** section, in the **Trigger On** field, select **Before Record Load**.
   e. In the **Condition** section, select **Visual Builder**.
   f. Click the **Open** icon to open the Condition Builder, and create a condition with the following properties:

Column Name	Value
Record	Sales Rep
Field	Supervisor
Compare Type	any of
Selection	Current User

   g. Click **Add**, and then click **Save** to save the condition.
   h. In the **Parameters** section, in the **Label** field, enter **Approve**.
   i. Click **Save** to save the action.
3. To create the Add Button action for the **Reject** button, do the following:
   a. In the Workflow Diagrammer, click **State 2 Pending Approval**.
   b. In the context panel, on the **State** tab, click **New Action**.
   c. In the **New Action** window, click **Add Button**.
   d. In the **Basic Information** section, in the **Trigger On** field, select **Before Record Load**.
   e. In the **Condition** section, select **Visual Builder**.
   f. Click the **Open** icon to open the Condition Builder, and create a condition with the following properties:

Column Name	Value
Record	Sales Rep
Field	Supervisor
Compare Type	any of
Selection	Current User

g. Click **Add**, and then click **Save** to save the condition.
h. In the **Parameters** section, in the **Label** field, enter **Reject**.
i. Click **Save** to save the action.

4. To set up the transition to **Step 3 Approve** if the supervisor clicks the **Approve** button, do the following:
   a. In the Workflow Diagrammer, double-click the transition arrow from **State 2 Pending Approval** to **State 3 Approve**.
   b. In the **Workflow Transition** window, in the **Execute on Button** field, select **Approve**.
   c. Click **Save** to save the transition.
5. To set up the transition to **Step 4 Reject** if the supervisor clicks the **Reject** button, do the following:
   a. In the Workflow Diagrammer, double-click the transition arrow from **State 2 Pending Approval** to **State 4 Reject**.
   b. In the **Workflow Transition** window, in the **Execute on Button** field, select **Reject**.
   c. Click **Save** to save the transition.

Next Step: To continue with the estimate approval workflow example, go to State 3 Approved.

State 3 Approved

After you set up **State 2 Pending Approval** to enable supervisors to approve or reject estimates, set up **State 3 Approved**. Create a Set Field Value action to set the **Approval Status** to **Approved** and create a Send Email action to notify the sales rep that the estimate was approved.

To set up State 3 Approved:

1. Make sure the Estimate Approval Routing workflow is open from the step State 2 Pending Approval.
2. To create the Set Field Value action, do the following:
   a. In the Workflow Diagrammer, click **State 3 Approved**.
   b. In the context panel, on the **State** tab, click **New Action**.
   c. In the **New Action** window, click **Set Field Value**.
   d. Enter the following properties:

Section	Property	Value
Basic Information	Trigger On	Entry
Parameters	Field	Approval Status
Value	Static Value	selected
—	Selection	Approved

e. Click **Save**.

3. To create the Send Email action, do the following:
   a. In the Workflow Diagrammer, click **State 3 Approved**.
   b. In the context panel, on the **State** tab, click **New Action**.
   c. In the **New Action** window, click **Send Email**.
   d. Enter the following properties:

Section	Property	Value
Sender	From Field	selected
	Record	Sales Rep
	Field	Supervisor
Recipient	From Field	selected
	Record	Current Record
	Field	Sales Rep
Content	Custom	selected
	Subject	Your Estimate Has Been Approved
	Body	Estimate {number} has been approved by your supervisor.
	Include View Record Link	checked

   e. Click **Save**.

Next Step: To continue with the estimate approval workflow example, go to State 4 Rejected.

State 4 Rejected

After you set up **State 3 Approved** to approve estimates and send an email to the sales rep, set up **State 4 Rejected**. Create a Set Field Value action to set the **Approval Status** to **Rejected** and create a Send Email action to notify the sales rep that the estimate was rejected.

To set up State 4 Rejected:

1. Make sure the Estimate Approval Routing workflow is open from the step State 3 Approved.
2. To create the Set Field Value action, do the following:
   a. In the Workflow Diagrammer, click **State 4 Rejected**.
   b. In the context panel, on the **State** tab, click **New Action**.
   c. In the **New Action** window, click **Set Field Value**.
   d. Enter the following properties:

Section	Property	Value
Basic Information	Trigger On	Entry
Parameters	Field	Approval Status
Value	Static Value	selected
	Selection	Rejected

e. Click **Save**.

3. To create the Send Email action, do the following:
   a. In the Workflow Diagrammer, click **State 4 Rejected**.
   b. In the context panel, on the **State** tab, click **New Action**.
   c. In the **New Action** window, click **Send Email**.
   d. Enter the following properties:

Section	Property	Value
Sender	From Field	selected
	Record	Sales Rep
	Field	Supervisor
Recipient	From Field	selected
	Record	Current Record
	Field	Sales Rep
Content	Custom	selected
	Subject	Your Estimate Has Been Rejected
	Body	Estimate {number} has been rejected by your supervisor.
	Include View Record Link	checked

   e. Click **Save**.

Next Step: Now that the workflow setup is complete, test and then release the workflow. To continue with the estimate approval workflow example, go to Testing the Estimate Approval Routing Workflow.

Testing the Estimate Approval Routing Workflow

Before releasing your workflow, it is important to test the workflow to ensure it is functioning as designed.

After setting your workflow release status to Testing, you can verify the following:

- Estimates are transitioning properly.
- Estimate statuses are updated properly.
- Email is being sent in the appropriate state.

After you have tested the estimate approval routing workflow, change the release status to **Released**. See Release Status for Workflow Instances.

Welcome Email Sent to Customers Three Days After First Order Workflow

The following example shows how to create a scheduled workflow to send a "Welcome" email to a customer three days after the customer places an order.

The example uses a custom field, Email Scheduled, on the customer record form to identify if the email has already been scheduled. A saved search identifies customers who have at least one sales order and

who have not received the welcome email. The workflow runs the saved search on a daily schedule and sends the email to the customers that meet the saved search criteria.

> **Note:** If any current customers have existing sales orders, this workflow also sends the welcome email to those customers.

To set up the workflow, complete the following steps:

1. Create the custom field for the Customer record. For information, see Step 1 Create the Custom Field for the Customer Record.
2. Create the saved search. For information, see Step 2 Create the Saved Search.
3. Create the workflow and set the schedule. For information, see Step 3 Create the Workflow and Set the Schedule.

You can also use these steps to build this process into a larger workflow.

Step 1 Create the Custom Field for the Customer Record

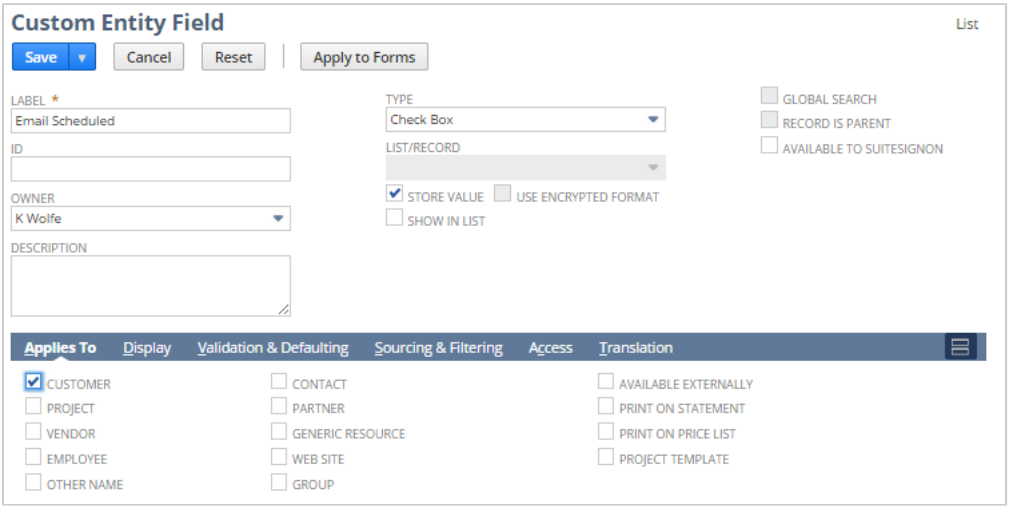
You need to create a custom field for the Customer record form. The field tracks if the welcome email was scheduled. The workflow sets this field to true after NetSuite schedules the email. This field is set to false for all customers by default.

The saved search uses this field as search criteria, so you must create the field before you can create the saved search.

To create the custom entity field for the Customer record form:

1. Go to Customization > Lists, Records, & Fields > Entity Fields > New.
2. On the **New Custom Entity Field** page, enter **Email Scheduled** for **Label** and select **Check Box** for **Type**.
3. On the **Applies To** subtab, enable **Customer**.
4. Accept the default for the other field values.

   The following screenshot shows the **New Custom Entity Field** page:



5. Click **Save**.

This field is initially disabled for all customers, meaning that all customers have not yet received the welcome email.

Step 2 Create the Saved Search

The saved search for this workflow should include the following criteria:

- Customers with at least one Sales Order
- Customers with an Email Scheduled value of false

To create the saved search:

1. Go to Lists > Search > Saved Searches > New.
2. On the New Saved Search page, click **Customer**.
3. Enter **Customers with Sales Orders** in the **Search Title** field.
4. To find customers with sales orders:

   On the **Criteria** tab, scroll to the bottom of the **Filter** list, then select **Transaction Fields**. The Saved Customer Search window appears.
5. From the **Transaction Filter** list, select **Type**. The **Type** list appears. Select **any of** from the drop down list, then **Sales Order** from the scrolling list. Click **Set**.
6. On the **Criteria** tab, scroll to the bottom of the **Filter** list, then select **Transaction Fields**. The Saved Customer Search window appears.
7. From the **Transaction Filter** list, select **Main Line**. A list appears. Select **Yes**, then click **Set**.
8. To find customers who have not received the welcome email:

   On the **Criteria** tab, select the **Email Scheduled** field from the **Filter** list. A list appears. Select **No**, then click **Set**.

   The following screenshot shows the **Criteria** tab for the saved search:

9. To find customers with at least one Sales Order, click the **Summary** subtab on the **Criteria** tab and select the following options:
   - From the **Summary Type** list, select **count**.
   - From the **Field** list, select **Transaction Fields**. From the Transaction Field list, select *****, then select **greater than**, and enter a **Value** of **0**. Click **Set**.
10. Click **Save**.

Step 3 Create the Workflow and Set the Schedule

Create a workflow for the Customer record and set a daily schedule for the workflow. To start, you can create a single state with a Send Email action and a Set Field Value action for the Email Scheduled field on the Customer record. After you create the workflow, NetSuite runs the saved search a day at midnight

and identifies customers who placed their first Sales Order that day. After three days, the workflow sends the welcome email to those customers.

To create the workflow and workflow actions:

1. Go to Customization > Workflows > Workflow > New.
2. On the **New Workflow** page, enter the following properties:

Section	Property Name	Value
Basic Information	Name	Send Welcome Email
	Record Type	Customer
	Sub Types	Customer
	Release Status	Released
Initiation	Scheduled	checked
Schedule	Saved Search	Customers with Sales Order
	Repeat	check
	Frequency	Daily

   By default, on the Daily schedule, NetSuite runs the saved search every calendar day at midnight.
3. Click **Save**.
4. Select the state in the diagrammer and click the **Edit** icon on the **State** tab in the context panel.
5. In the **Name** field, enter **Welcome Email**.
6. Click **Save**.
7. To create the Send Email action:
   a. Select the **Welcome Email** state in the diagrammer.
   b. Click **New Action** on the **State** tab the context panel.
   c. Click the **Send Email** in the **New Action** window.
   d. In the **Trigger On** field, select **Scheduled**.
   e. Enter the following properties:

Section	Property	Value
Schedule	Delay	3
	Unit	Day
Sender	Specific Sender	Select a sender.
Recipient	From Field	Record: Current Record Field: Customer
Content	Use Template	Select a template from the **Template** dropdown list.

   f. Accept the default values for the other properties and click **Save**.
8. To create a Set Field Value action to set the value of the **Email Scheduled** field on the Customer record to true, complete the following steps:
   a. Select the **Welcome Email** state in the diagrammer.
   b. Click **New Action** on the **State** tab the context panel.
   c. Click **Set Field Value** in the **New Action** window.

d. In the **Parameters** section, select **Email Scheduled** in the **Field** dropdown list.
e. In the **Value** section, select **Static Value** and enable **Checked**.
f. Accept the default values for the other properties and click **Save**.

For testing purposes, you can set the **Delay** on the Send Email action to a smaller time period and use a test email address to verify the email content before you send the email to customers. For more information, see Testing Scheduled Actions and Transitions and Testing a Send Email Action.

Storing a Return Value from a Custom Action Script in a Workflow Field

This sample shows how to store a return value from a custom action script into a workflow field. This example can be useful in the following cases:

1. You want to get a value from the Item sublist and use this value as a condition in the workflow. You use obj.getSublistValue in the script and return this in the workflow.
2. You want to check if a certain item is existing in the Item sublist. The script returns "0" if item is not existing and "1" if it does.
3. You want to make sure that all items in the Item sublist have a quantity equal to or greater than 1 (similar case as #2).

To store a return value from a custom action script in a custom field:

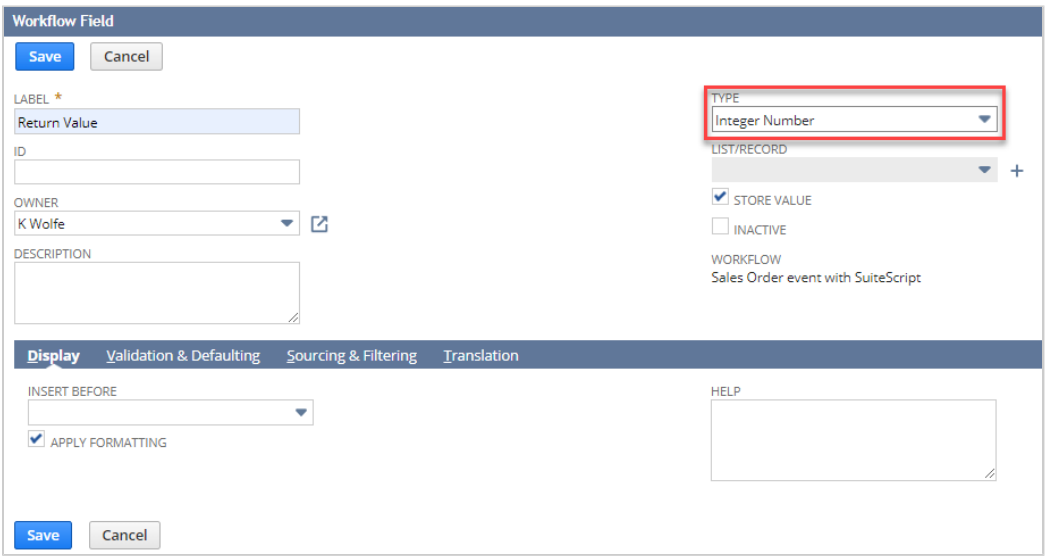
1. Create a new Workflow Action script.

   This script is an example.

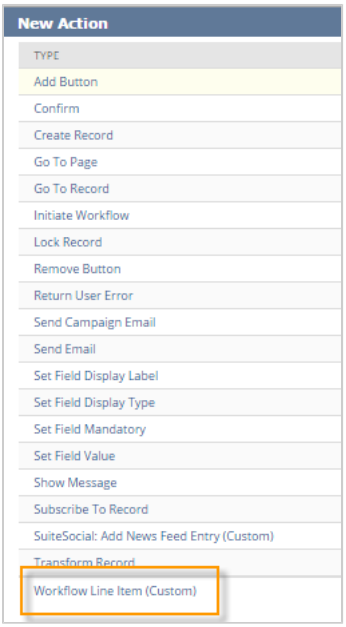
```
/**
 * @NApiVersion 2.x
 * @NScriptType WorkflowActionScript
 */
define([],
    function() {
        function onAction(scriptContext) {
            log.debug({
                title: 'Start Script'
            });
            var newRecord = scriptContext.newRecord;
            var itemCount = newRecord.getLineCount({
                                sublistId: 'item'
                                });
            log.debug({
                title: 'Item Count',
                details: itemCount
            });
            for(var i = 0; i < itemCount; i++)
            {
                var quantity = newRecord.getSublistValue({
                                    sublistId: 'item',
                                    fieldId: 'quantity',
                                    line: i
                                });
                log.debug({
                    title: 'Quantity of Item ' + i,
                    details: quantity
                });
                if(quantity === 0)
                {
                    return 0;
                }
```

```
34            }
35            log.debug({
36                title: 'End Script'
37            });
38            return 1;
39        }
40        return {
41            onAction: onAction
42        }
43    });
```

2. You need to make sure that the script returns a value. On the Script record page, on the **Parameters** tab, select a value from the **Return Type** list.
3. In SuiteFlow, create a workflow field. The field should be the of the same type as the return parameter of the Workflow Action script.



4. Within a state, add the custom action (this is the Workflow Action script).



The return value from the Workflow Action script can be stored in the **Store Result In** field.

Parameters
STORE RESULT IN
Return Value (Workflow)
FIELD
VALUE
JOIN
VALUE FIELD
FORMULA
No records to show.