PeopleSoft®

EnterpriseOne JDE5
Enterprise Workflow Management
PeopleBook

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Why Workflow Management is Important

In the past, companies benefited greatly from economies of scale, or the reduction of production costs that is achieved with increased output. These economies were possible because companies typically manufactured large quantities of standard products for relatively large and stable consumer groups. However, economies of scale are becoming less important in today's marketplace, due in large part to increasing fragmentation of the consumer base. With so many products available, customers are more discriminating than ever and often expect highly complex services to go with the products that they purchase.

As a result, the definition of productivity as it relates to business success is rapidly and radically changing. No longer is productivity defined as simply creating more with less. Increasingly, value is linked not to sheer output but to innovation, or the ability to correctly anticipate and creatively respond to new and changing market opportunities. Today, a keen competitive advantage is enjoyed by those organizations that have the flexible business infrastructures and tools in place to quickly develop new products and services and continuously outperform their competitors' time to market.

The dependence of today's business enterprises on innovation and fast delivery of product cannot be overestimated. Consider, for example, the fact that a full 50% of Hewlett Packard's current sales come from new products introduced in the last three years. With this new emphasis on relentless innovation and the advantages that it breeds, successful companies are constantly searching for ways to reshape their corporate structures to streamline their business processes.

Workflow Management: Streamlining Business

Today, it is clear that goods and services must be produced both faster and smarter through teamwork and efficiency. Only those companies with innovative staff, products, services, and short development cycles will prosper.

Workflow management, a strategy for automating business processes, is a powerful tool for translating the collaborative vision into real-world business applications with clear and measurable paybacks. The aim of workflow management is to streamline the components of various office systems by eliminating unnecessary tasks (thereby saving the time, effort, and costs associated with performing those tasks) and automating the remaining tasks in a process.

Workflow management can be thought of as the effective application of information technologies to internal business processes in order to accelerate the collaborative and creative processes that drive innovation. The idea behind workflow software technology is to create a single environment to manage the complexity of multiple office automation environments. As software has moved from individualized solutions with dedicated functionality to integrated groupware solutions, workflow has evolved as a metaphor for the efficient coordination of multiple workgroups using multiple technologies.

Most workflow products support two basic functions. First, they provide tools for mapping out business processes, which may be defined sets of routes, roles, and rules for the movement of documents and tasks. Second, they implement those processes through linkages with a company's computer network, shared databases, and e-mail systems so that information can flow through the organization at a controlled and efficient pace

Following is an illustration of a basic workflow process for approving an increase to a customer's credit limit:

```
                                          ┌──────────┐
                                          │          │   Notify Originator
                                          │          │   of Rejection
                                          └──────────┘
                                               ▲
                                               │
                                            Reject
                                               │
  ┌──────────┐                              ◇
  │          │   Originator         ◇       ◇   Approval Authority
  │          │   Requests New  ───▶   ◇ ◇       Approves or Rejects
  └──────────┘   Credit Limit         ◇
                                               │
                                            Approve
                                               │
                                               ▼
                                          ┌──────────┐
                                          │          │   Update Database with
                                          │          │   New Credit Limit
                                          └──────────┘
                                               │
                                               ▼
                                          ┌──────────┐
                                          │          │   Notify Originator of
                                          │          │   Approval
                                          └──────────┘
```
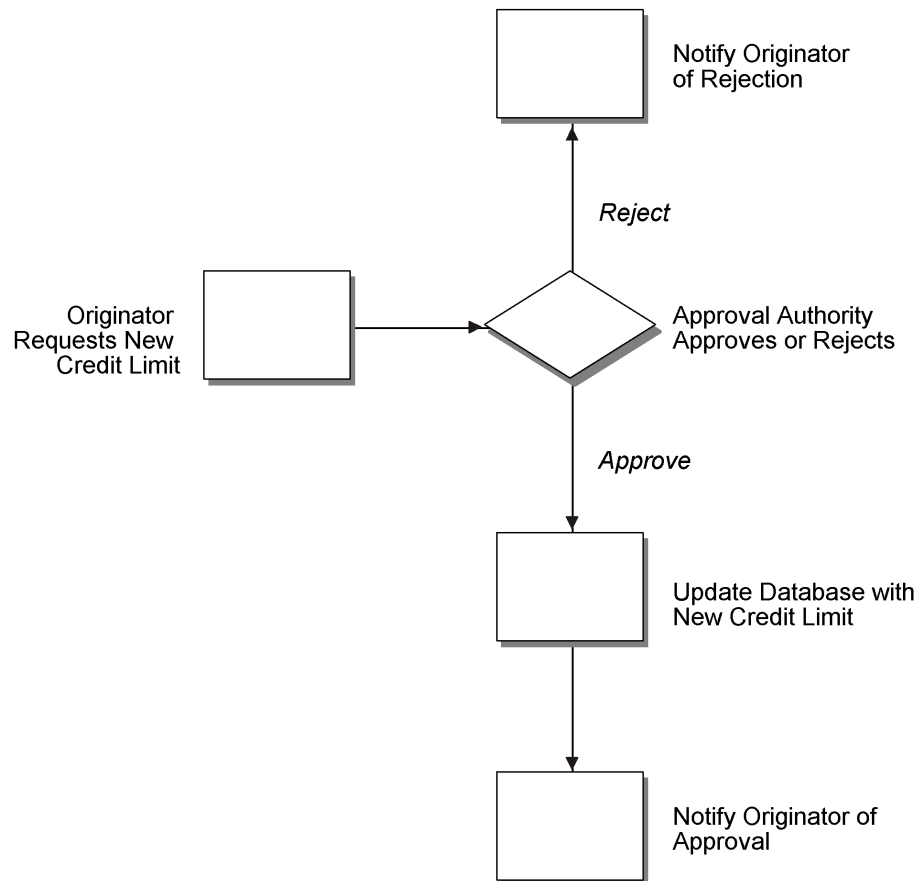
The Benefits of Workflow Management

Because organizations are made up of a series of intricately intertwined business cycles, these cycles are a logical place to look first when attempting to streamline. According to the Workflow Management Coalition, almost 90% of all time that used to perform tasks within the business setting is classified as transfer time, whereas 10% is used for the actual performance of those tasks. The objective of workflow analysis is to redefine and then reconstruct the components of lengthy business cycles so that the time required to execute a task is minimized and the transfer time between tasks is eliminated entirely.

Other key benefits of workflow management include:

- Improved efficiency through the elimination of many unnecessary task steps

- Better business process control achieved by standardizing work methods and creating audit trails

- Improved customer service when consistency in the processes leads to greater predictability in levels of response to customers

- Flexibility bred from software control over processes, which enables their future redesign in response to changing business needs

Workflow Enhancement Scenario

Information that is critical to a workflow process can be defined and stored in database tables, allowing a computer system to automate the flow of information and tasks throughout the enterprise. This automation minimizes the need to rely on physical meetings to enter redundant data, and to physically exchange paper. For example, using an automated workflow process, purchase orders; and work orders can be processed to completion without a single printout. The defined workflow information might include order activity rules, workflow steps, and expenditure authorization requests, all of which can be routed automatically via e-mail.

The following scenario demonstrates the savings in labor and time that can be achieved when workflow management technology is applied to a typical business process like procurement.

Conventional Workflow

The following graphic illustrates the paper trail of a typical procurement process. Following the graphic is an explanation of the step-by-step tasks of this conventional workflow and the total time required to complete the procurement process.

Paper Trail of Typical Procurement Process

A typical sequential process, represented above includes many manual steps that require a great deal of time and repetitive effort.
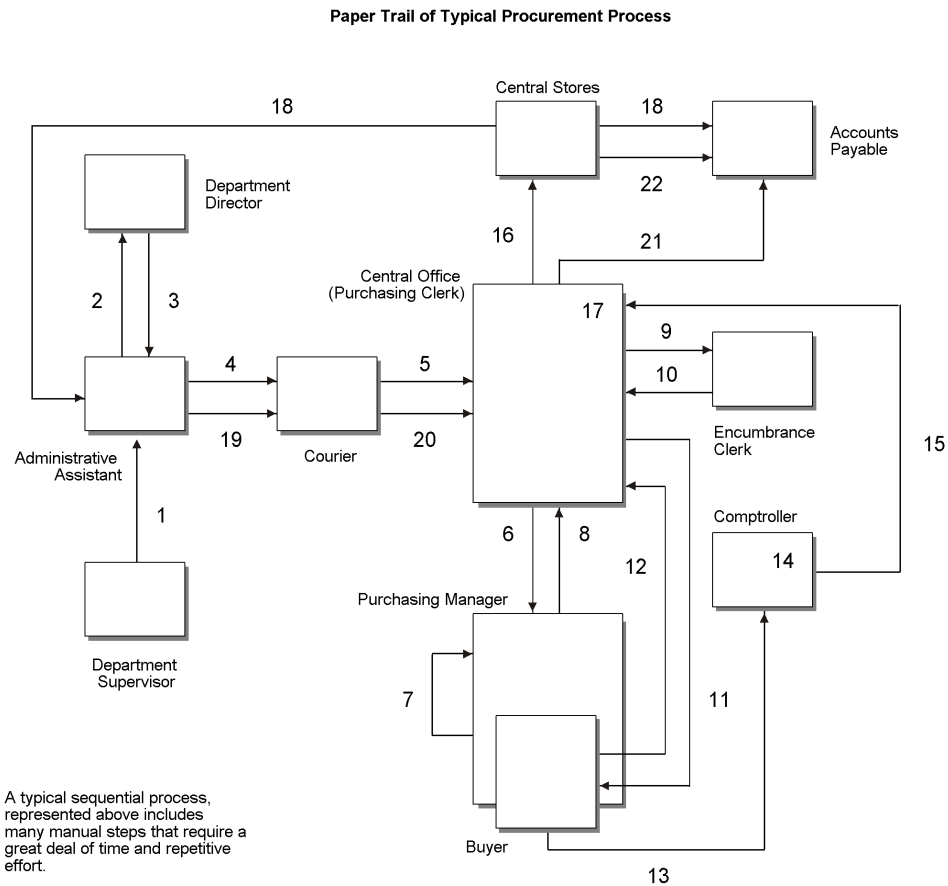
The following steps illustrate the tasks that employees in an organization might perform to execute a workflow process that is not automated.

1. The department supervisor at a remote office fills out a requisition form to request goods.

2. The administrative assistant processes the requisition form, looks through two catalogs and locates the items. The assistant then fills out the paper portion of the requisition and walks it to the department director.

3. The department director reviews the requisition, signs it, and puts it in an Out basket.

4. The administrative assistant retrieves the requisition and places it in a courier pack to the central office.

5. A courier drives to the remote office, picks up the courier pack, and delivers it to the purchasing clerk at the central office.

6. The purchasing clerk reviews the requisition, audits central stores, and sends the requisition to the purchasing manager if the item is in stock, or to the buyer if the item is not in stock.

7. The buyer reviews the document, selects the supplier, calls for a quote, and passes the requisition to the purchasing manager.

8. The purchasing manager reviews, signs, and places the requisition in an Out basket.

9. The purchasing clerk retrieves the requisition and passes it to the encumbrance clerk.

10. The encumbrance clerk reviews the items, assigns account codes, and checks the budget. If funds are available, the requisition is passed back to the purchasing clerk.

11. The purchasing clerk sends the requisition to the comptroller if the item is in central stores, or to the buyer if it is not in stock and must be bought and delivered to central stores.

12. The clerk retrieves the purchase order and delivers it to the comptroller or buyer.

13. The buyer consolidates the requisition into a single purchase order per vendor and places the order in the out basket for delivery to the comptroller.

14. The comptroller reviews and signs the purchase order. At this step, the routing can take longer, based on the amount of the request and the level of authorization of the person approving the purchase.

15. The clerk retrieves the document and places it in interoffice mail. Another day passes.

16. A multipart document arrives one day later via interoffice mail in the purchasing department. The purchasing clerk tears out the white copy and sends the rest of the multipart form to central stores.

17. The purchasing clerk logs and files the white copy.

18. The central stores clerk retrieves the item from the shelf, tears out the pink copy, places it in the accounts payable stack, and ships the item and the remaining copies to the remote office.

19. The administrative assistant receives the item, tears out, logs, and files the blue copies, and places the green receiving and yellow accounts payable copy in a courier pack to go back to the central office.

20. A courier retrieves the pack and returns the green and yellow copies to the central office.

21. The purchasing clerk attaches the white original and green receiving copies to each other, puts them in the file, and sends the yellow copy to accounts payable.

22. The accounts payable clerk receives the invoice from central stores, retrieves the open yellow receiver copy from the file, and matches and enters the voucher.

Total time (in minutes) per item if the item is not in stock: 172.5

Total time (in minutes) per item if the item is in stock: 147.5

Enhanced Workflow with Enterprise Workflow Management

The following graphic illustrates how OneWorld Enterprise Workflow Management enhances this workflow by reducing the paper trail, minimizing redundant data and data entry, and reducing errors or the need to redo work.

Workflow Enhancement
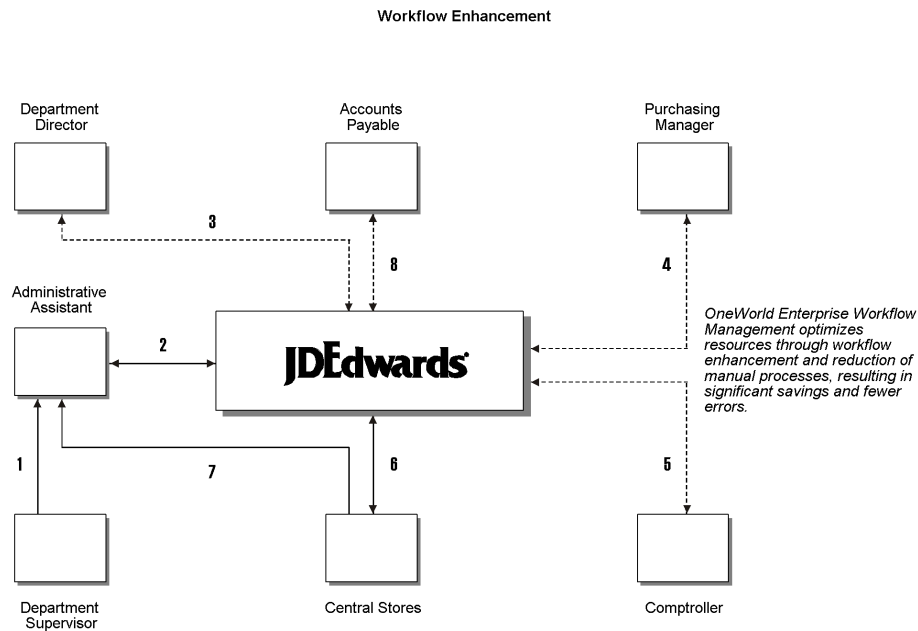
Using Enterprise Workflow Management, the organization streamlined its workflow process as described in the following steps.

1. The department supervisor fills out a requisition form to request goods.

2. The administrative assistant processes the requisition form online. The system checks the budget and automatically routes the request to the next approver based on the Workflow Table hierarchy and the amount of the item.

3. The department director reviews and approves the requisition online. The system automatically routes the requisition to the appropriate buyer or purchasing manager.

4. The purchasing manager consolidates the requisition with others for the same vendor into a purchase order. The system automatically routes the purchase order to the next approver.

5. The comptroller reviews and approves the purchase order as required.

6. The purchase order is automatically routed to central stores. A clerk takes the pick slip, retrieves the item from the shelf, and ships it for next-day delivery.

7. The administrative assistant receives the item on the next day.

8. The accounts payable clerk receives the invoice online and matches it to the open receipt that is also online. The system automatically creates a voucher.

Total time (in minutes): 27

J.D. Edwards Brings Ideas to Action

J.D. Edwards has built a number of useful workflow management tools into our software. With these tools, you can create workflows that can be seamlessly incorporated into your company's business processes.

With J.D. Edwards workflow management tools, you have the power to put your innovative ideas about how to streamline your business tasks quickly and take action. And a year from now, when existing approaches no longer meet market demands, you have the ability to respond quickly and modify your workflows, maintaining your competitive advantage.

Enterprise Workflow Management Overview

OneWorld Enterprise Workflow Management (Workflow) is a means of automating your high-volume, formerly paper-based process into an e-mail-based process flow across a network. Documents, information, and tasks pass from one participant to another for action based on a set of procedural rules. The result is an automated and efficient process with minimal user involvement, which allows you to streamline your existing business processes, to increase efficiency and reduce process time. Moreover, Workflow uses the tools already in place in OneWorld. You can use the OneWorld toolset to easily Workflow-enable any application. This flexibility and ease of use allows you to put new and innovative business process ideas into your existing system without any major changes.

Workflow allows you and your employees to access Workflow messages or tasks from several places, such as:

- Work Center
- Employee Queue Manager
- Third-party e-mail systems
- Work Item Manager (OneWorld Portal users only)

You can monitor your Workflow processes and activities in the following ways:

- From the Workflow administrator's perspective through the Process Activity Monitor. This monitor allows an administrator to override authority at the execution of certain activities or to monitor the activity flow for potential roadblocks in Workflow queues.

- From a user's perspective through the Work Center, which displays action or error messages that require user interaction. For example, when a user receives notification that a document requires his review, the routing and the document appear within the Work Center.

The Workflow model is based on two principles:

Routes	Routes define the path along which the Workflow engine moves work. This work could involve a message, a batch process, a function, an executable, a halt in the system or a form. Routing can be simple, meaning that it is typically sequential; or it can be complex, meaning that it involves joins or splits, parallel routing, or iteratives routing (looping).
Rules	Rules define to whom or to where work should be routed. Rules define the conditions that must be met for the Workflow engine to progress from one step to the next. Rules can be contingent upon predefined threshold values, or it can be simple enough to just move to the next step in a process.

Workflow supports the following workflow process:

Scripted	Scripted workflow automates business processes that are repetitive or that can be predefined. This type of workflow, which can be highly automated and requires minimal user interaction, can be an approval process or reviewing data in a workbench. For example, you can script a process in which a user is sent a message to approve or reject an increase to a customer's credit limit. If the user approves the increase, the system updates the customer's credit information in the database. If the user rejects the change, the system retains the old credit information.

Enterprise Workflow Technology

Workflow incorporates the following technologies:

Universal routing sheets	User-defined rules guide the flow of work for a process. For example, when you enter a sales order, you can initiate a customer fulfillment process that includes billing, work order generation, inventory replenishment, forecasting, and scheduling.
Multiple routing instructions	Any business process can have a number of workflow routes configured for it, giving your business the flexibility to readily adapt to changing market conditions, as well as handle the inevitable exceptions to the rules. For example, you can specify as many routes as you need to handle purchase orders based on dollar amounts, items, and origin.
Separation of business rules from technology	A single OneWorld application can adapt to numerous routing situations without requiring programmers to rewrite the source code. Many other integrated applications do not have this flexibility because their workflow processes are hard-coded at installation. In these other applications, constructing different Workflow routes requires programmers to write application code specifically for the different routes. J.D. Edwards Universal Routing Sheet, on the contrary, allows a single application to handle many different situations.
Workflow queues	Workflow queues sort messages based on departments within your company and message types. These message types can include action messages, such as approval or rejection messages; error messages, such as notification that a batch process failed to run; and personal mail messages.
Display and control for Workflow routes	In addition to a text-based procedure for establishing workflow processes, Workflow incorporates graphical display and control for its processes. This graphical display and control makes establishing processes more intuitive, and therefore easier to set up and modify.
Media objects and Workflow facilitators	Workflow is capable of supporting technologies such as OLE objects, imaging, shortcuts to forms, and hotlinks to Web sites to facilitate the flow of a given business process through an enterprise. Scanned text and images can be attached to any Workflow document, which provides your personnel with additional information for decision-making purposes.
Extended MAPI compliance	Workflow complies with the Messaging Application Programming Interface (Extended MAPI). Extended MAPI is a Microsoft Windows Open System Architecture (WOSA) that defines messaging system architecture. Extended MAPI defines what the components in a messaging system are and how they behave. It also defines the interface between the messaging system and the components. Extended MAPI also allows messaging components to communicate with incompatible messaging systems.

Workflow Features

Workflow gives you the ability to do the following:

- Attach a Workflow process with event rules to any event within an application, batch process, or named Event Rules (ER). You can also attach a Workflow process through table event rules in Table Design Aid.

- Execute conditional processing, which is logic contingent upon supplied criteria, such as quantity and dollar amount. This criterion can be any parameter used in the decision-making process that OneWorld can evaluate.

- Create messages specific to the process by setting up message templates (text substitution messages) in the data dictionary.

Workflow also:

- Integrates seamlessly with OneWorld interactive and batch applications

- Offers multiple level approvals

- Offers manual escalation of processes, in which the administrator has the ability to override or bypass certain activities or users in the Workflow process

- Automatically time stamps all activities within a process for improvement analysis and auditing

All of the technology, rules, and principles explained above allow you to work more efficiently and reducing cycle time. The automated process reduces errors and generates less paperwork. Furthermore, OneWorld development tools help you develop Workflow-enabled applications, or quickly and smoothly enable existing applications for Workflow. You have the ability to attach any Workflow process that sends a message or calls an application to any event within an application. All you have to do is attach a Start Process call to an event within an application to initiate the Workflow process. Because this process is defined outside of your application, it offers you unlimited flexibility to incorporate your innovative ideas into OneWorld.

The Components of a OneWorld Workflow Process

The following graphic illustrates a basic OneWorld Workflow process. The components that make up the process are activities and activity conditions. The Start activity begins the process when triggered by an event within an application, such as someone changing a customer's credit limit. Based on this change, the system sends a message to a designated user (an approver) to review the change, and either approve or reject it.

The lines in the graphic labeled "If Approve" and "If Reject" illustrate the activity conditions. Activity conditions are user-defined rules within the process that determine the next activity. If the approver approves the change, a business function (a Function activity within the OneWorld Workflow system) updates the database with new information (such as the customer's new credit limit). The system then sends a message back to the originator, acknowledging that the changes were made. If the approver rejects the change, the system sends a message to the originator of the message, informing him or her that the request was rejected. The database remains unchanged if the request is rejected.

A Workflow Process

Start

If approve
(Activity condition)

If reject
(Activity condition)

Send action
message
(Message
activity)

Accept

Reject

Update the
database
(Function activity)

Notify originator
that request has
been rejected
(Message
activity)

Send notification
to user
(Message activity)

End
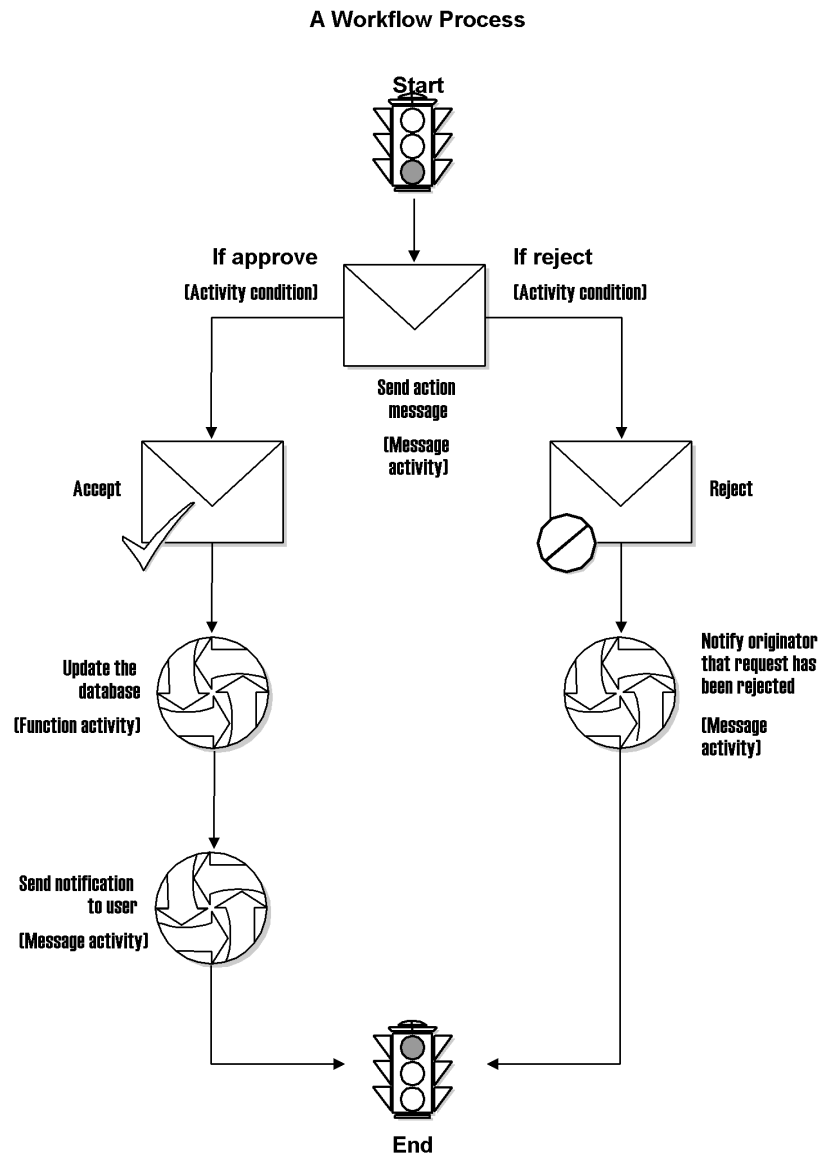
Each icon in this graphic represents an activity that takes place within a process. The following activities may be used in a workflow:

Start

This activity is automatically attached to the process when you create a Workflow process.

End

As with Start, this activity is automatically attached to the process when you create a workflow process.

Function

This activity attaches a business function for special logic processing, including any business functions written in C programming language or named event rules. For example, you can set up a function activity that updates the database if a user approves an action message.

Interactive application

This activity starts a OneWorld interactive application, such as Work With Journal Entries.

Message

This activity generates a message based on system functions within OneWorld. You can attach the Generic Approval form (P98805) or any other form. You can also attach a message template that contains values that are substituted from data items within key data and additional data for the workflow.

You can mark a message activity as one that will be monitored for escalation. Escalation enables the system to forward, or escalate, unread messages after a certain period of time to another user in a different distribution list. You add escalation to a message so that if the original recipient of the message is not available to respond to the message, another person receives the message instead.

The Check for Expired Activities program (R98810), which you can start manually or schedule, monitors processes that use escalation.

Run executable

This activity launches an executable program that you specify-for example, a word processing application or spreadsheet.

Batch application

This activity starts a OneWorld batch application.

Process

This activity starts another workflow process, also referred to as a subprocess, which includes its own set of activities.

Halt process

This activity suspends the process for a certain period of time. Once a period of time has passed or when an event occurs, the process starts again. The process is permanently halted until some outside event restarts it. The date and time specified within the instance record specifies the earliest time that it can be restarted.

The Check for Expired Activities program (R98810), which you can start manually or schedule, monitors processes that have been halted.

Recipient condition	Recipient conditions determine where to send messages. Recipient conditions are used when defining recipient rules. For example, you might set up a recipient condition called ACCTG that uses customer address book numbers as the criterion to determine where to send messages. You could add logic to the recipient condition to tell the system that if the customer number is equal to a range of 1 through 3001, then send messages for those customers to the accounting department distribution list. You can have multiple recipient conditions in a recipient rule.

After a process is activated, the process and activity definitions are protected, thus preventing you from changing the process definitions and activities associated with it while the process is running. Therefore, you cannot attach a new activity to an active process, or change an existing activity. To change a process or activity, you must first deactivate it, or copy an active process and create a new version. The system protects active processes to ensure the integrity and accuracy of the audit data that is generated for the process.

If instances of a process exist, you must copy the process and make changes to the copy or purge the process. See Purging Workflow Data Files for more information. If you deactivate a process with instances, you still cannot change it.

The system stamps the time and date of each transaction within the process so that you can analyze each transaction for improvement analysis through the Process Activity Monitor or Advanced Analysis.

See *Monitoring Process Activity* or *Analyzing Workflow Processes* for more information.

Example of a Workflow Process

The Accounts Receivable system can detect when a OneWorld user changes a customer's credit limit. This ability to detect a change allows for an approval process to automatically route a message to the appropriate people for their approval or rejection.

In the following example, a OneWorld user changes a customer's credit limit from 50,000 USD to 60,000 USD. The system displays a message box that notifies the user that the changes have been submitted for approval. The system does not reflect the new credit limit in the customer record until the change is approved.
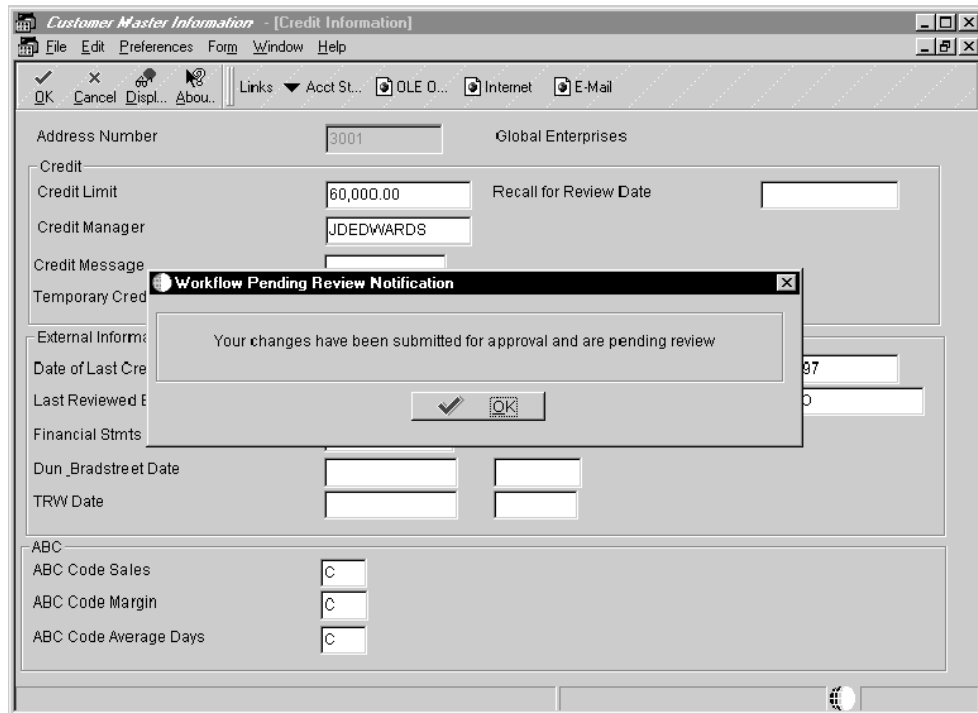
Note that the message shown in this example is specific to the Credit Limit Changed process and does not show up automatically in a process that you set up. You can add a message similar to this one through a form interconnect when you attach a process to an application. See *Attaching a Process to an Application* for more information.

The approver receives a message in the Credit Management Queue through the Employee Work Center. The message indicates that the change is pending approval.
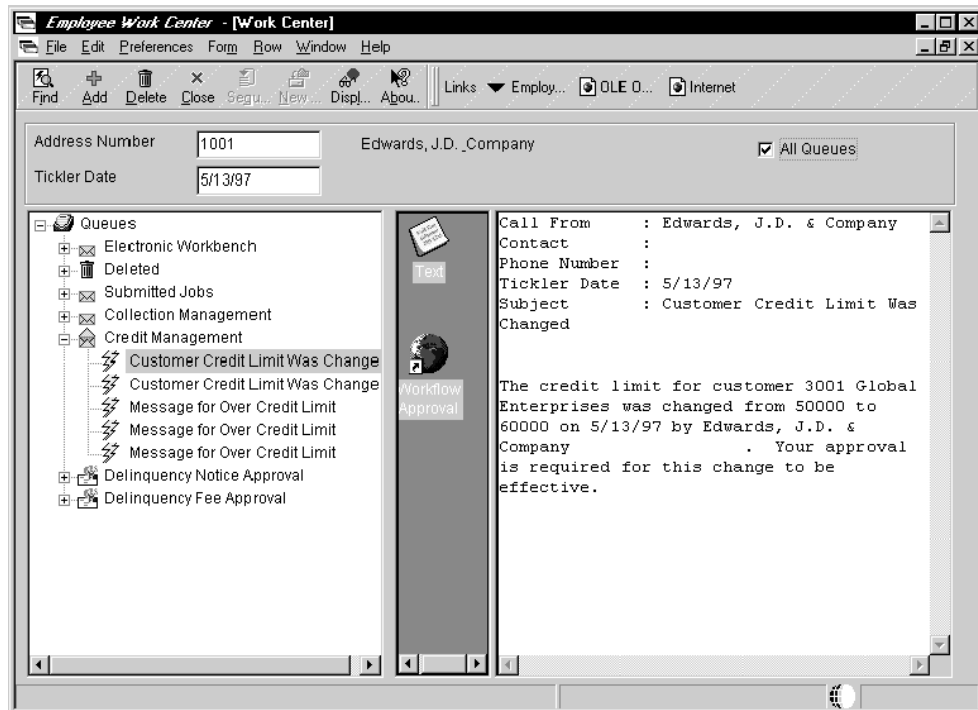
To approve or reject the change, the approver clicks the "Customer Credit Limit Was Changed" message and clicks the Workflow Approval icon, which opens a form used to approve or reject the message. This form also allows the approver to add supplemental information about the approval or rejection action for audit purposes.

If the approver rejects the change, the system clears the message from the queue, which completes the Workflow activity. The system retains the customer's old credit limit information and sends a message to the originator informing him or her of the rejection.

If the approver approves the change, a function activity initiates a Named Event Rule (NER) that updates the database with the customer's new credit limit.
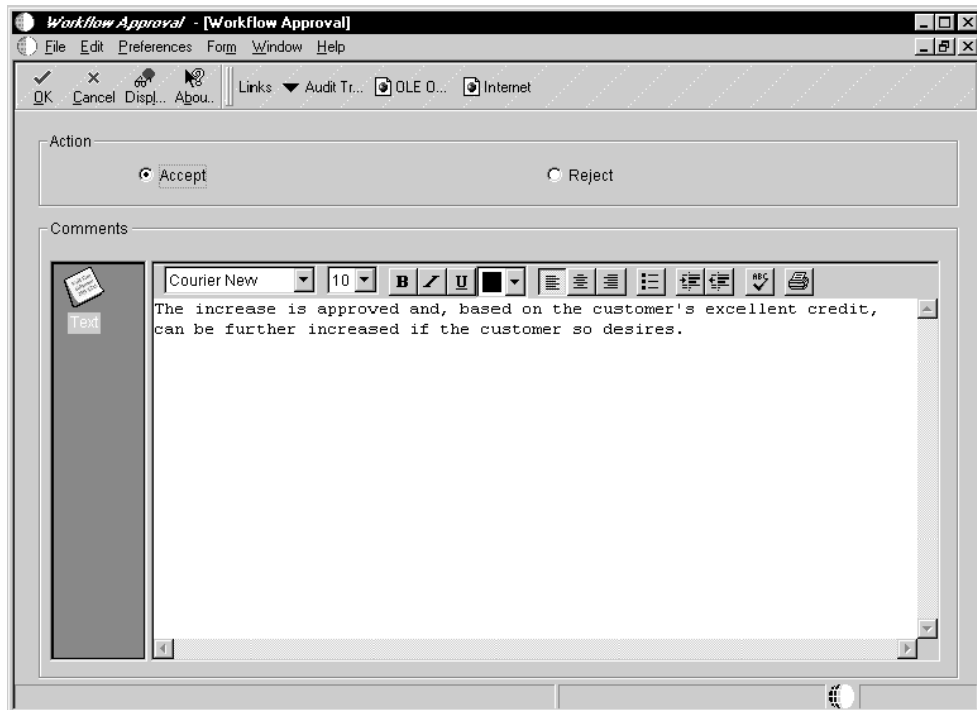
At this point, the process sends a message to the user who originated the credit limit change, indicating that the credit limit change was approved.
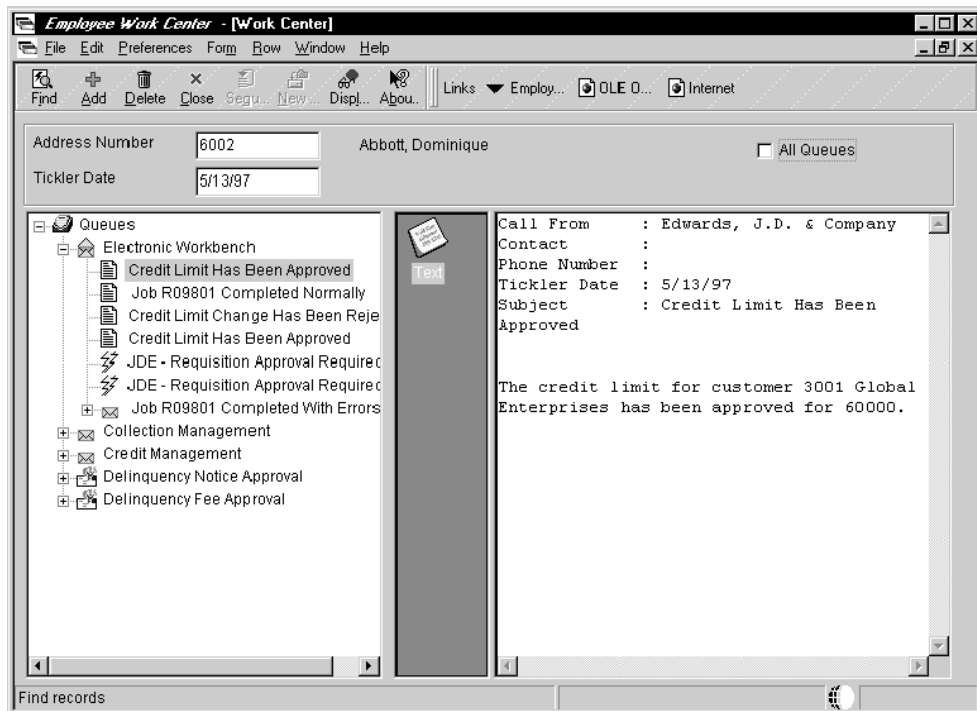
Planning for Workflow

OneWorld Enterprise Workflow Management (Workflow) is a tool that enables your well-managed business to run even more efficiently. Workflow management is essentially value-neutral, meaning that it does not substantially improve the efficiency of processes that are poorly designed originally. Therefore, before thinking about ways to better manage your internal workflows, your company should first complete some degree of business process reengineering. This planning process is vital to ensure that your current business processes and management approaches are synchronized with today's volatile competitive environment, and not a hindrance to flexibility and growth.

This section discusses:

❑ Creating a diagram of an organizational schematic

❑ Identifying candidate processes for workflow

❑ Designing process prototypes

Before You Begin

Before you begin creating workflow processes using Workflow, perform the following:

❑ Understand the concepts of OneWorld development tools. See the *Development Tools* documentation for more information.

❑ Define your users and distribution lists in Address Book prior to setting up your Workflow processes. See the *Address Book* documentation for information about entering address book profiles for new users.

❑ If you are going to integrate with a third-party e-mail system, see *Setting Up a Third-Party Mail System*.

Creating a Diagram of an Organizational Schematic

The first step in reengineering is to get a clear picture of the existing processes used to accomplish the tasks within your organization. To define and name essential and recurring processes, think of each task's beginning and end states.

The following example details a process with starting and ending states for each action in the process:

Process	Starting and Ending States
Budget Preparation	Forecast to allocation
Sales	Prospect to order
Procurement	Requirement to receipt
Service	Inquiry to resolution
Problem	Manifestation to clearance

Diagramming processes in an organizational schematic can help you visualize how they integrate with your system's technology infrastructure and the flow of information within the present structure. The schematic provides a comprehensive definition of the current

components that make up these tasks, as well as the information systems used in the organization prior to the application of workflow.

Identifying Candidate Processes for Workflow

The organizational schematic provides a clear framework for the next step in the process. The organizational schematic identifies appropriate workflow tasks. To do this, analyze your defined business task cycles using well-known performance criteria such as process speed, cost, accuracy, quality, customer satisfaction, and process flexibility**.** Processes that are not working well according to these criteria are most likely the ones in greatest need of reengineering. In addition, you should also consider processes that contain many manual steps. After identifying processes that benefit from workflow management solutions, produce a short list of high-priority, high-feasibility projects.

After you complete a short list of projects, use one of the following approaches to prioritize these workflow reengineering projects. Consider ranking projects according to:

Critical Success Factors	For your specific business, rank the performance criteria listed above in order of importance, and determine which business processes are most closely connected with those criteria. These processes are directly related to your competitive advantage and success.
Strategic Imperatives	Prioritize by assessing your company's strategic positioning with competitors, customers, distributors, and suppliers. Considerations such as operational necessity, defensive necessity, and competitive opportunity might be some of the strategic imperatives that are most important to your company.
Core Competencies	Focus on corporate capabilities that add the most value to your products and services (for example, product development and customer service). By focusing reengineering efforts on these basic capabilities, you'll be strengthening those operations with which your company is most closely identified in the eyes of customers, staff, and the general public.

Designing Process Prototypes

After you identify the business processes that will benefit most from workflow management, create a process prototype that identifies all the criteria needed for creating a workflow process.

► **To design process prototypes**

1. Uniquely name each process using a maximum of 10 characters.

2. Assign the process a description using a maximum of 40 characters.

3. Describe the process in detail from beginning to end:

   - Identify where and how a process is called and what the individual activities in the process are, such as whether a business function or subprocess will be called, at what point a message will be sent, or when an application will be launched. Business functions typically update a database with data from the process. Subprocesses are called by other processes and include their own set of activities.

   - Determine all of the relevant data that will be needed throughout the entire process. This step helps you determine which data items to include eventually in the data structures within the process. Data structures are a fundamental

element of any programming language or environment. They are used to encapsulate logically related pieces of data into a single package. This package, or group of data items, is then used to pass information back and forth between different objects, such as forms, business functions, and reports.

- Determine which tables will be updated at the outcome of the process.

4. Create a graphical representation of the process, including the activities and activity conditions that affect it. Activity conditions are user-defined rules that determine which activity executes, as well as what happens after that activity executes.

5. List the activities as they occur in the process.

6. Identify your primary (key) data and additional data. Key data contains the data items that make an instance of a process unique. Additional data contains all the data that the process (and any activity within that process) needs to complete the flow.

7. Define the messages that the process generates.

8. Organize distribution lists for the messages that your process generates. Distribution lists allow you to group employees into categories for message routing.

9. Define any activity conditions.

10. Define recipient rules that can affect the process. Recipient rules determine to whom or to which distribution list a message is sent.

After you have performed these tasks, you can use Workflow to begin creating your processes.

Workflow Setup

In addition to creating the Workflow process, you might also need to set up message templates. Workflow processes use message templates to present messages that contain specific information or information that is substituted from data items within the process.

If necessary, you can also set up new queues to which Workflow messages are delivered.

You can set up these components either before or during the creation of the Workflow process.

Setting Up Message Templates

When you create a message activity (an activity that sends messages to individuals or to distribution lists), you can choose a predefined message template (or text substitution message) that contains the text used as the body of the message. It might also contain values that are substituted with data from the key data and additional data.

You can set up a new message template before you begin creating a Workflow process or set up the template during creation of a message activity.

Use the following naming convention when creating Workflow message templates:

> LM*xxxxyyy*
>
> where LM identifies the message as a Workflow message
>
> *xxxx* = the system code (use system codes 55 through 59 for customer-specific messages)
>
> *yyy* = a sequential number

► To set up a message template

1. From Data Dictionary Design (GH951), choose Workflow Messages (P92002).
2. On Work With Glossary Items, click Add.

3. On the Item Specifications tab, complete the following fields:

- Alias

- Glossary Group

    Enter Y to identify the message as a Workflow message.

- Language

- Product Code

- Description

- Error Level

    If this is an informative message, such as a message notifying a recipient that an employee's salary has been increased, enter 3.

4. Click the Item Glossary tab.

5. Enter the text for the message.

    If the message contains values that will be substituted by data items from your key data and additional data, leave a placeholder for them by using an ampersand (&) and the number of the value.

    The form shown in the following graphic shows an example of & and the value number.
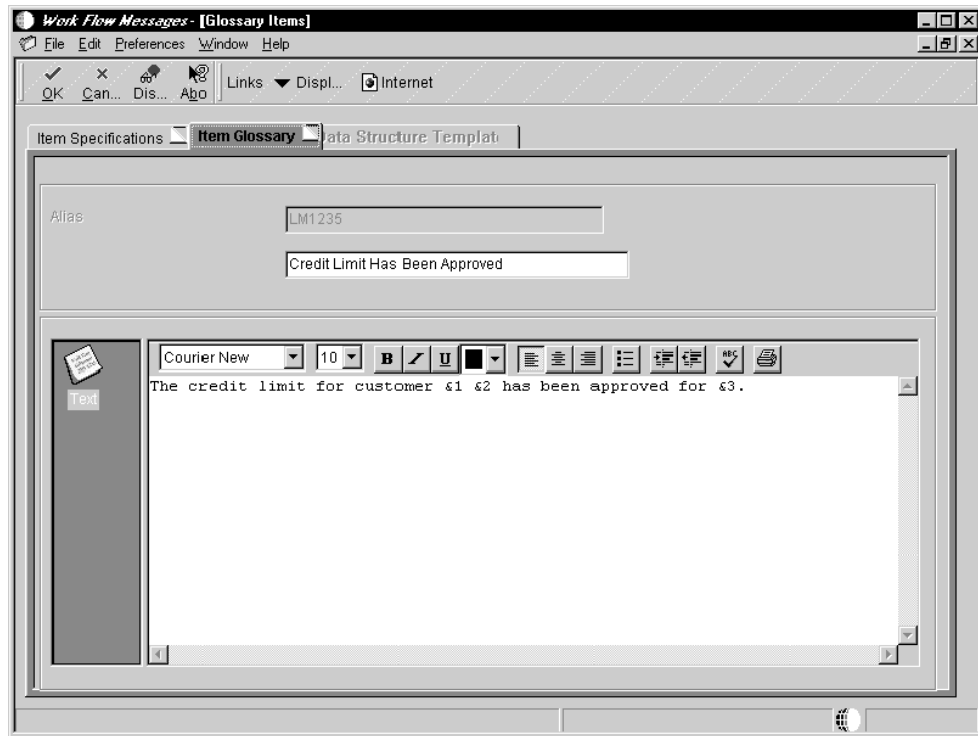
6. Click OK when you have finished setting up the message template.

See Also

□ *Creating a Text Substitution Error Message* in the *Development Tools* documentation

Setting Up Queues

Queues categorize messages within the system and organize them in the Employee Work Center. For example, messages can be categorized into queues for priority mail, Internet messages, or submitted jobs. Through a queue, users can approve or reject certain activities in the process flow. You set up a queue in the same way as you set up any user defined code (UDC).

Workflow includes several predefined queues, but you might want to set up a custom queue for messages generated by processes that you create. For example, you might want to set up a queue for messages generated by a credit limit approval process. This queue gathers any approval or rejection messages related to credit limits for customers. A user can then open that queue and act on the message contained within it.

You can set up the following types of custom queues for a Workflow process:

- Queues for categorizing and grouping purposes. For example, you can set up a queue to collect messages regarding credit management information.

- Queues with a shortcut to a OneWorld application. This shortcut opens a OneWorld application that is assigned to that queue and related to the function of that queue. For example, you can set up a queue that is linked to the Over Credit Limit Review form (P03B31).

You can attach shortcuts to queues and to messages. See *Working with Messages* in the *Foundation* documentation for information about attaching shortcuts to messages.

► **To set up a queue**

1. From Workflow Management Setup (G0241), choose Workflow User Defined Codes (G02411), and then choose Employee Task Queues.
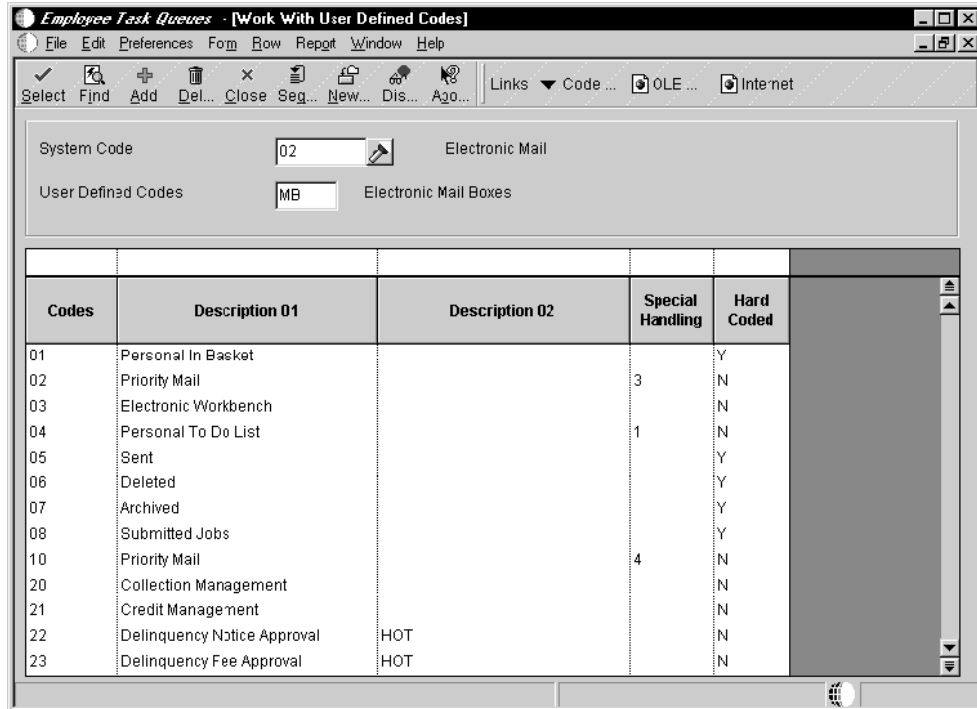
2. On Work With User Defined Codes, click Add.
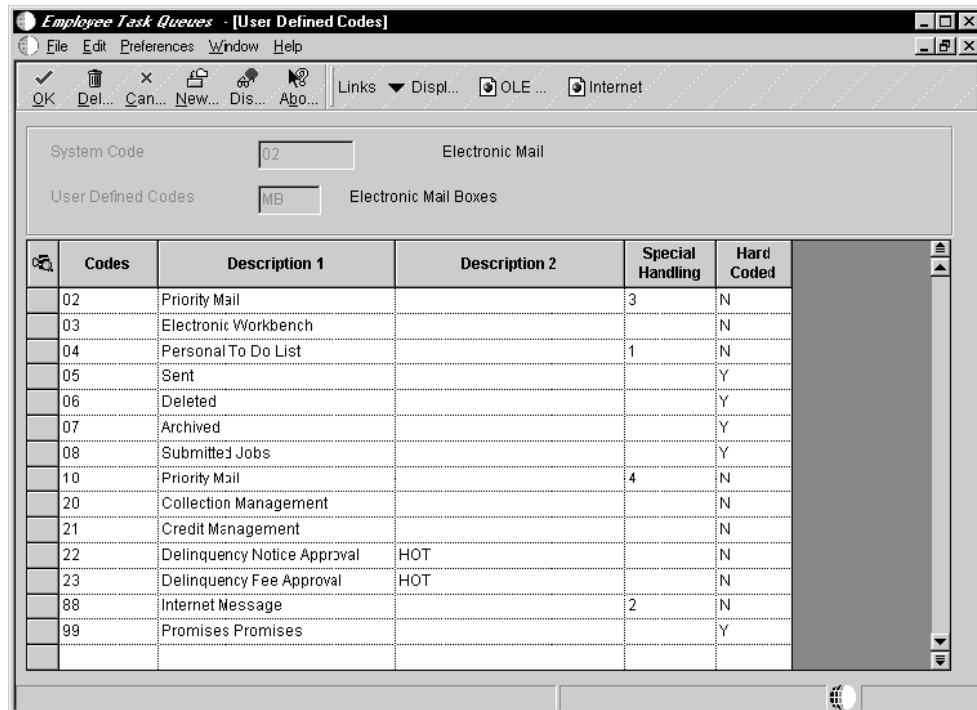
3. On User Defined Codes, complete the following fields in an empty row in the detail area and click OK:

- Codes

  Enter a unique number for the queue.

- Description 1

- Description 2

  Specify "HOT" for Description 02 if you intend to attach a shortcut to this queue. If you do not plan on attaching a shortcut, this field is optional.

- Special Handling

- Hard Coded

  Enter N in this field.

► **To add a shortcut to a queue**

You add a shortcut to a queue that provides a link to a OneWorld application. For example, you can give a recipient the chance to review information within a OneWorld application whenever he or she opens messages in that particular queue.

1. From Workflow Management Setup (G0241), choose Queue Properties.

23
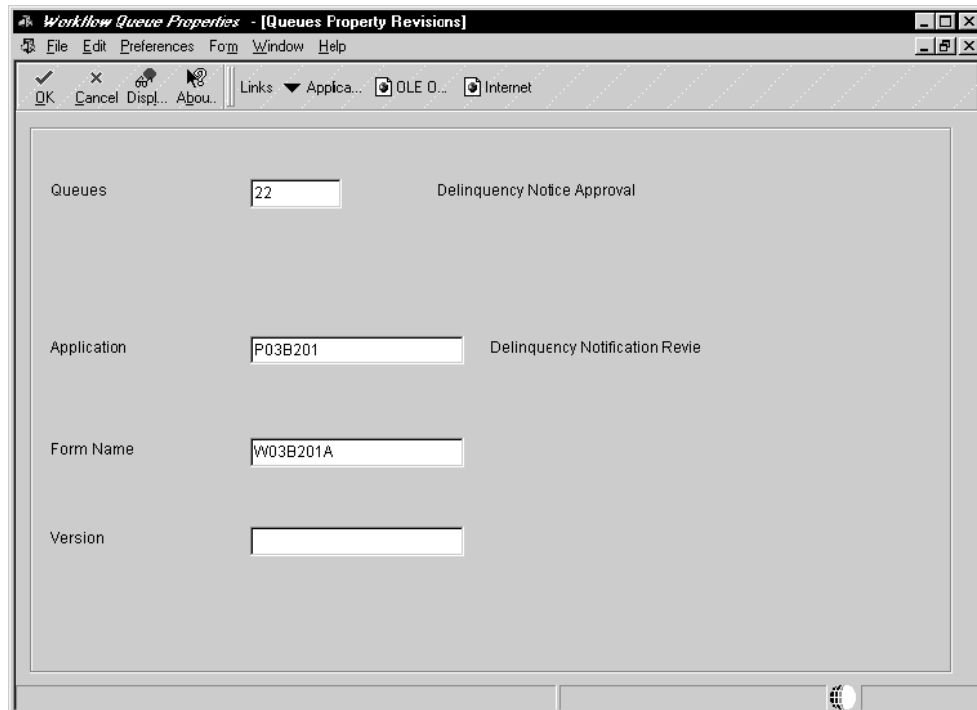
2. On Queues Property Revisions, complete the following fields and click OK:

- Queues

  Enter the code number of the queue to which you want to attach a shortcut.

- Application

  Enter the program number of the application to which you want to create a shortcut.

- Form Name

- Version

See Also

❑ *User Defined Codes* in the *Foundation* documentation

Setting Up External Mail Access

OneWorld provides an integrated mail system that allows OneWorld users to communicate with each other. OneWorld uses two external mail mechanisms to allow OneWorld users to communicate with others outside of OneWorld:

- Simple Mail Transfer Protocol (SMTP)

- Messaging Application Programming Interface (MAPI)

Simple Mail Transfer Protocol

Simple Mail Transfer Protocol is a TCP/IP protocol for sending messages from one computer to another on a network. SMTP is used on the Internet to route messages. In OneWorld, the Send Message system function uses SMTP to route messages to external e-mail addresses.

If you choose to enable sending external mail using SMTP, you must add the following lines to the [JDEMAIL] section in the jde.ini file of each OneWorld client:

- Rule1=90|OPT|MAILSERVER=*smtp_server_name*

  The MAILSERVER setting identifies the name of the SMTP server responsible for sending messages. This setting must be equal to the name of the machine on which the SMTP service is running. This server name is the same as it is listed in the TCP/IP host file on the server.

- Rule2=100|DEFAULT|OWMON=OWMON@jdedwards.com

  When the Send Message system function is initiated from the OneWorld Server Administration Workbench, the OWMON parameter is used to determine the From address for the mail message. Set this parameter to an appropriate mail address for your company.

- Rule3=110|DEFAULT|JDE_SYSTEM=JDE_System@jdedwards.com

  When the Send Message system function is initiated within application or business function event rules, the JDE_SYSTEM parameter is used to determine the From address for the mail message. Set this parameter to an appropriate mail address for your company.

- Rule4=120|DEFAULT|WORKFLOW_SYSTEM=Workflow@jdedwards.com

  When the Send Message system function is initiated from an activity in a workflow process, the WORKFLOW_SYSTEM parameter is used to determine the From address for the mail message. Set this parameter to an appropriate mail address as the originator of a workflow message for your company.

- Rule5=130|OPT|MERGELOCAL=1

  For current installations, the MERGELOCAL parameter setting should be equal to 1.

- Rule6=140|OPT|UPDATELOCAL=0

  For current installations, the UPDATELOCAL parameter setting should be equal to 0.

Benefits of Using an SMTP Server

The following are benefits of using an SMTP server:

- You can separate mail functions along client/server lines, which facilitates the creation of front-end client mail software that is independent of the back-end mail engine. An SMTP server is not dependent on what kind of external mail software is being used in your company.

- You can send messages to anyone with an external mail address by using the Send Message system function. You must pass a valid e-mail address in the recipient field.

Messaging Application Programming Interface

The Messaging Application Programming Interface(MAPI) is a messaging architecture and client interface that allows client applications to interact with multiple messaging systems. MAPI provides a generic interface that adds basic messaging features to a client application by enabling it to send and read mail from any messaging system that is MAPI-compliant. In OneWorld, the Work Center application includes a MAPI interface that allows it to display, send, and manipulate mail in Outlook, Lotus Notes, or any other MAPI-compliant mail package.

Setting Up a Third-Party Mail System

To enable the MAPI interface in the Work Center, you must first confirm that the Messaging component of the Windows operating system has been installed on the client workstation. (For Windows NT, this is the Windows Messaging component that is in the Add/Remove Programs dialog accessible from Control Panel. For Windows 95/98, this is the Microsoft Exchange component that is in Add/Remove Programs dialog accessible from Control Panel.) This component contains the MAPI DLLs and the program that allows you to set up a mail profile to access your mail system. This installation is a required step even if you are not using a Microsoft product for your mail service.

After the Windows Messaging software has been installed, you create a mail profile to identify the mail package with which the Work Center interacts using MAPI. You can create a profile by using the Mail (for Windows NT) or Mail & Fax (for Windows 95/98) icon in the Control Panel. If your company uses a Microsoft product for mail, your profile should be configured for the Microsoft Exchange Server information service. For any other type of mail system (such as Lotus Notes), you must manually configure the information services that are specific to your mail package.

After the mail profile has been created, you must add the following to the [JDEMAIL] section in the jde.ini file of the OneWorld client:

> mailProfile=*mail_profile_name*

where *mail_profile_name* is the name of the profile that you created.

If you do not assign the profile name in the jde.ini file, you are prompted for a profile when you initiate external mail operations in the Work Center.

Defining Application Shortcut Types for External Messages

With the J.D. Edwards messaging system, J.D. Edwards software users can send e-mail messages to users of external messaging systems, such as Microsoft Outlook or Microsoft Exchange. When sending external messages, J.D. Edwards users can include shortcuts to J.D. Edwards applications. Since J.D. Edwards supports Windows and HTML clients, the external message can contain a shortcut for a Windows application or an HTML application.

Windows Application Shortcuts

If a J.D. Edwards user sends a shortcut to a J.D. Edwards Windows client, then the message should contain a shortcut for a Windows application.

HTML Application Shortcuts

If a J.D. Edwards user sends a shortcut to a J.D. Edwards Portal user, then the message should contain a shortcut for an HTML application in the form of a URL. When a Portal user

opens a shortcut to a URL, if the user is not logged on, the Portal logon screen appears and the user must sign in. The application appears after the user logs on. If the Portal is running when the user opens the shortcut, then the shortcut automatically opens the application.

ActiveX Shortcuts

You can also include an ActiveX shortcut for an HTML application. Messages with ActiveX shortcuts contain a Launch Application button that opens an HTML application in a new session of J.D. Edwards Portal in Microsoft Internet Explorer. If a recipient of an ActiveX shortcut is currently using an HTML application, the application launched by the shortcut will not interfere or replace the recipient's current application. After the recipient clicks the Launch Application button, the recipient will have to log on to the new Portal session in order for the application to appear.

Note

The ActiveX shortcut does not work with the Netscape browser.

Windows Application Shortcuts

When sending an external message to a Windows client user, users can include a shortcut for a Windows application. The shortcut launches a Windows application in the Windows client.

Configuration for Windows Application Shortcuts

You must modify the JDEMAIL section of the jde.ini file to specify Windows application shortcuts as the shortcut type for external messages.

If a J.D. Edwards software user is sending the shortcut from a fat client, you must modify the jde.ini file on the client workstation. If a J.D. Edwards user is sending the shortcut from a thin client or through a function that is executed on the server, you must modify the jde.ini file on the enterprise server. Typically, you should update the jde.ini file in both locations.

► **To specify Windows as the application shortcut type**

Modify the following section of the jde.ini file:

[JDEMAIL]

Modify the value of the ClientType or ShortcutType setting.

Setting	Value	Purpose
ClientType= Or ShortcutType=	• Windows	Windows. The external e-mail message will contain a Windows application shortcut. Windows is the default value for the setting.

Web Application Shortcuts

When sending an external message to a J.D. Edwards Web client user, users can include a shortcut for a Web application in the form of an ActiveX attachment or a URL.

ActiveX Shortcuts

ActiveX shortcuts contain a Launch Application attachment that opens a Web application in a new session of J.D. Edwards Web client in Microsoft Internet Explorer. If a recipient of an ActiveX shortcut is currently using a Web application, the application launched by the shortcut will not interfere or replace the recipient's current application. After the recipient clicks the Launch Application attachment, the recipient will have to log on to a new Web client session in order for the application to appear.

Note

The ActiveX shortcut does not work with the Netscape browser. However, it is the preferred shortcut type for Web client users using Internet Explorer because it avoids potential conflicts between the application that is currently running and the application being launched.

URL Shortcuts

URL shortcuts open Web applications in the J.D. Edwards Web client. When a Web client user opens a shortcut to a URL, if the user is not logged on, the logon screen appears and the user must sign in. The application appears after the user logs on. If the Web client is running when the user opens the shortcut, then the shortcut automatically opens the application.

Configuration for Web Application Shortcuts

You must modify the settings in the jde.ini file to determine the type of Web application shortcut users can include in external messages.

If a J.D. Edwards software user is sending the shortcut from a fat client, you must modify the jde.ini file on the client workstation. If a J.D. Edwards user is sending the shortcut from a thin client or through a function that is executed on the server, you must modify the jde.ini file on the enterprise server. Typically, you should update the jde.ini file in both locations.

► **To specify the Web application shortcut type**

Modify the following sections of the jde.ini file:

[JDEMAIL]

Modify the value of the ClientType or ShortcutType setting to determine the application shortcut type.

Setting	Value	Purpose
ClientType= Or ShortcutType=	• ActiveX • URL	ActiveX. The external e-mail message will contain a Launch Application attachment that opens a Web application in a new session of the Web client in Microsoft Internet Explorer. URL. The external e-mail message will contain a URL for a Web application shortcut.

[JAS PREFERENCE]

For customers using service pack 19.1 or earlier on the Web server and the enterprise server:

Setting	Value
JasServer=	*web server name*
Port=	*port number*
Servlet=	If you are using the Portal: /jde/servlet/com.jdedwards.oneworld.owportal.PortalBuilderServlet If you are not using the Portal: /jde/servlet/html.login

For customers using service pack 20:

Setting	Value
JasServer=	*web server name*
Port=	*port number*
Servlet	If you are using the Portal: /jde/servlet/com.jdedwards.portal.PortalBuilderServlet If you are not using the Portal: /jde/servlet/com.jdedwards.runtime.virtual.VCServlet

For customers using service pack 21:

Setting	Value	Purpose
JasServer=	*web server name*	
Port=	*port number*	
Servlet	If you are using the Portal: /jde/servlet/com.jdedwards.portal.PortalBuilderServlet If you are not using the Portal: /jde/servlet/com.jdedwards.runtime.virtual.VCServlet	
Default Login	• Redirector • Standard	Use Redirector if the JAS server is a redirector Web server. Use Standard if the JAS server is a J.D.Edwards ERP Web server.
Protocol	• http • https	Use http if you are using the http protocol. Use https if you are using the https protocol.

Creating Workflow Processes

Use Workflow to translate a business idea into a workflow process. For example, you can create a Workflow process that automatically increases a customer's credit limit based upon an approval routing process. Workflow processes allow you to automate business processes that previously involved a paper trail.

Workflow processes contain activities, which perform an action, such as updating the database, sending a message, invoking an application, or running a report. You link activities together by a sequential flow of events or by some condition that must take place first. You attach key data and additional data to a process to pass information from one activity to the next.

You can add distribution lists to the workflow process. Distribution lists define to whom workflow messages are routed, and can include rules that define when and under what conditions a message should be routed. Furthermore, you can enable escalation processing for a message activity. Escalation processing allows messages to be forwarded to other users if the messages are not answered within in a specified period of time.

Creating a Workflow Process

When you create a workflow process you name it, attach key data and additional data, and then add activities. Any process that you create can be used as a subprocess of another process. Subprocesses are useful when you have subsets of activities common to multiple processes or that recur within a process.

For example, you might have a process that increases a customers' credit limit, sends messages to the appropriate parties (such as the customer account representative) when the customers' new credit limit is approved, and then starts a subprocess that prints letters to each customer who received an increase. You attach subprocesses as process activities, but you initially set them up as you do any other process.

Understanding Key Data and Additional Data

A Workflow process requires two data structures:

- Key data
- Additional data

Key data is the data items that make an instance of a process unique. In other words, key data is the key to the workflow process. You can use multiple data items within key data.

Additional data contains all of the other data that the process (and any activity within that process) needs to complete the process flow. Workflow uses additional data to pass information to activities within the process and to users. The system also uses additional data to track audit information for metrics. The parameters of the key data and additional data are stored in the Process Instance table (F98860). Do not include key data in additional data.

Workflow Key Data and Additional Data Naming Conventions

Key data and additional data both begin with WF and use the format WF*xxxxyyy*A or WF*xxxxyyy*B.

> WF = indicates a key or additional data selection

xxxx = specifies the system code (use codes 55 through 59 for customer-specific keys and additional data structures)

yyy = represents a sequential number

A = identifies key data

B = identifies additional data

Example: Key Data and Additional Data

You define both the key data and additional data on the Workflow Revisions form from the Data tab. The following example shows key and additional data for a Workflow process:

In this example the key data, WF55000A, consists of a single data item, which, in this case, is the customer number for the customer whose credit limit was changed. This data item is used to track the process in the system and, in this example, uniquely identifies an instance of the Credit Limit Changed process.

Additional data, WF55000B, contains the information that an approver of a process might need.

Naming a Workflow Process

When you add a new Workflow process, the first thing you must do is name it. Name the workflow using up to 10 characters.

Use the format K*xxxxyyyyy* to name a workflow process.

K = designates a workflow process

xxxx = specifies a system code that can be as many as four digits (use codes 55 through 59 for customer-specific processes)

yyyyy = represents a sequential number

You must also provide a description that indicates the purpose of the Workflow process. This description can be as many as 40 characters.

▶ **To name a Workflow process**

From the Cross Application Development Tools (GH902) menu, choose Object Management Workbench (P98220).

1. On Object Management Workbench, click Add.

2. On Add OneWorld Object to the Project, choose the Workflow Process option, and then click OK.

3. On Work With Processes, click Add.

4. On Workflow Revisions, click the Process Master tab, and then complete the following fields:

    -   Process

    -   Version

    -   Description

    -   Product Code

    -   Category Code 1

    -   Category Code 2

    -   Category Code 3

5. If you want to track history for the process, click the History Tracking option.

    When a workflow process is started, audit records are saved in the instance tables. If you leave this option off, no audit records will be kept for the process. They are deleted after execution is finished.

Specifying Key Data and Additional Data

After you have added and named a new Workflow process, you must specify key and additional data. If key and additional data do not exist for your new workflow, you can define new ones. You can also modify existing key and additional data.

► **To specify key data and additional data**

   1.   On Workflow Revisions, click the Data tab.
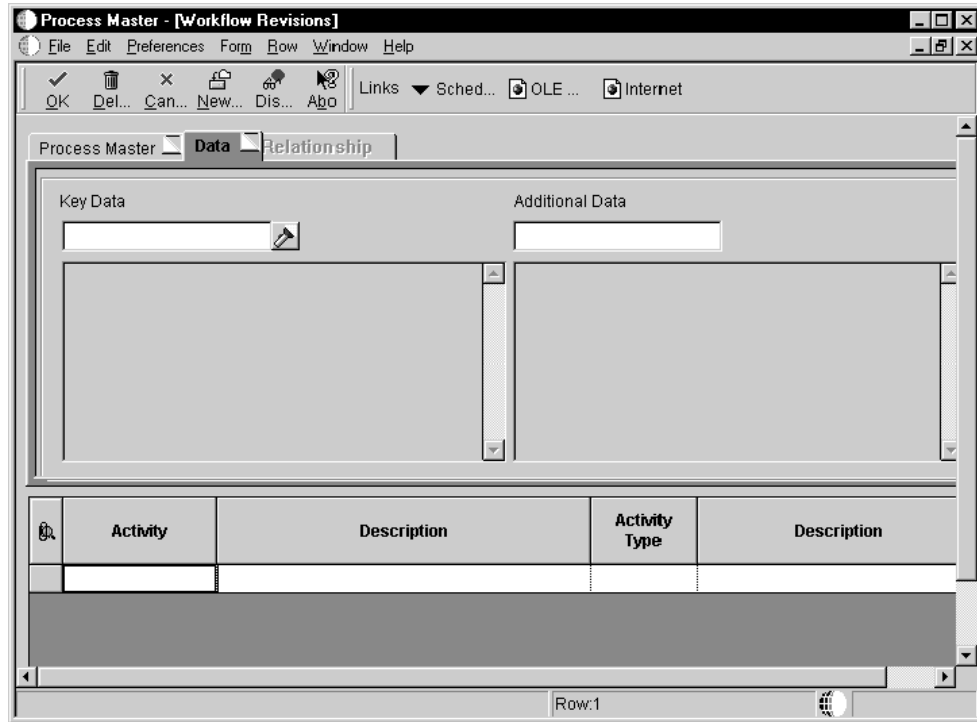
   2.   To use existing key data and additional data, complete the following fields:

- Key Data

- Additional Data

   3.   To define new key data or additional data, choose Add Key or Add Additional options from the Form menu.

```
Process Master - [Add Object ]                               _ □ ×
  File   Edit   Preferences   Window   Help                    _ 8 ×

   ✓      ×      👥      📝  ‖ Links ▼ Displ...  🔘 OLE ...  🔘 Internet
  OK    Can...   Dis...   Abo

  Object Name          W55000A              Object Type        DSTR

  Description          CREDLIMIT Key Data

  Product Code         03        Accounts Receivable

                                                    ⦿ Regular Data Structure

  Product System Code  03        Accounts Receivable

                                                    ○ Processing Option Template

  Object Use           360       Data Structures

                                                            🌐
```
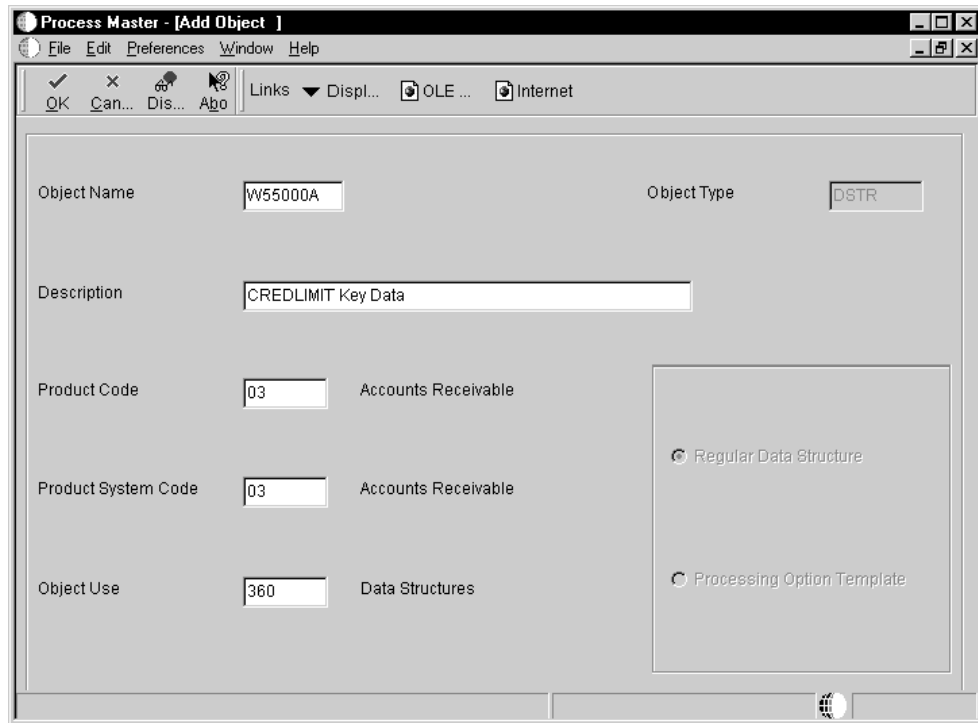
4. On Add Object, complete the following fields:

    - Object Name

      The system automatically names the key data or additional data using the appropriate naming convention. You can change this name.

      If the object name already exists, then the Key Data and Additional Data fields remain blank, and you must provide another name.

    - Description

    - Product Code

    - Product System Code

    - Object Use

5. Click OK.

6. The system displays the Object Librarian Data Structure Design form. Click the Design Tools tab and then click Data Structure Design.
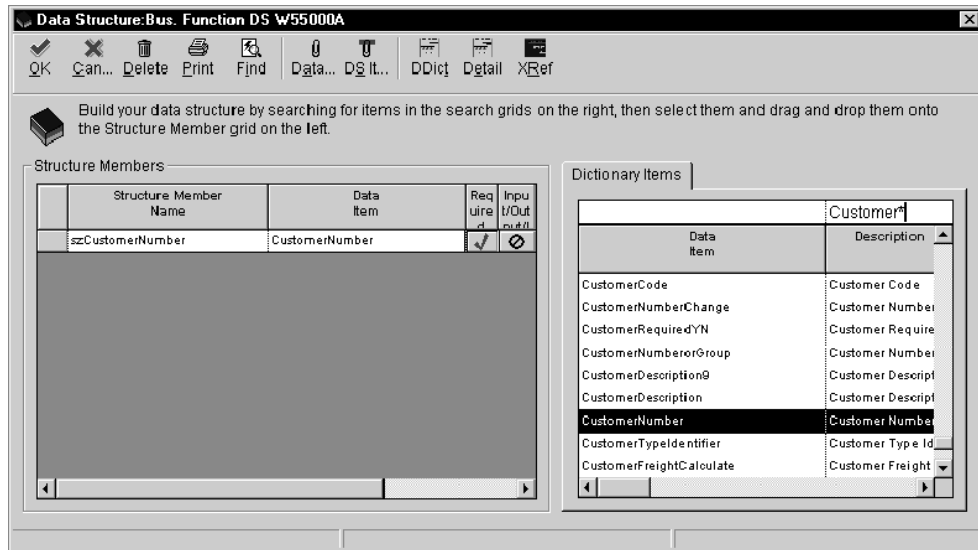
7. On Data Structure, choose the data dictionary items you want to include in the key data or additional data, and drag them to Structure Members on the left.

   You can rename structure member items by clicking the data item and typing a new name.

8. When you are finished choosing data items, click OK.

   Now you are ready to add activities to the process. Until you attach activities to the process, the Relationship tab appears blank. See *Adding Activities to a Process*.

Adding Activities to a Process

Workflow activities can include the following actions:

- Sending messages to another participant
- Initiating interactive or batch applications
- Halting a process
- Running an executable program
- Running a subprocess
- Initiating a business function or Named Event Rule (NER)

You use the Workflow Revisions application to add the various types of activities that you want to run when the process starts.

You can define activity conditions that determine when an activity is invoked. After you add activities and activity conditions, you can resequence the activities and change their relationships. See *Resequencing Activities* for more information. You can control the sequence of activities by joining the activities. You can also route messages through recipient conditions.

Before You Begin

❑ Create a process. See *Creating Workflow Processes*.

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Adding a Function Activity

A function activity attaches a business function for special logic processing, including any business functions written in C programming language or NERs written with event rules. A function activity typically updates the database with data from the process. For example, in the Credit Limit Changed process, the Update Credit Limit function activity updates the database if the approval has taken place.

Before You Begin

❑ Create a business function or NER if one does not exist. See *Business Functions* in the *Development Tools* documentation.

► **To add a Function activity**

1. On Workflow Revisions, click the Data tab, and then complete the following fields:

   • Activity

   • Description

2. Enter 05 in the Activity Type field for a Function activity.
3. Click the row, and then choose Event Rules Definition from the Row menu.
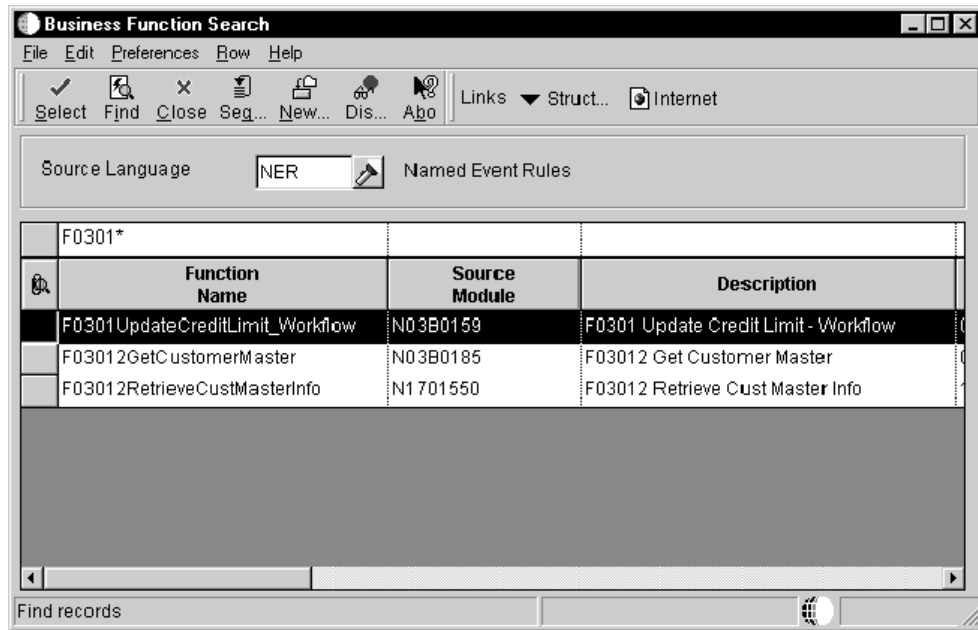
4. On Business Function Search, find and double-click the business function that you want to attach to this activity.

5. On Business Functions, map the parameters that you want to pass to the data item.

   For example, map BF mnAddressNumber to mnAddressNumber and map BF mnCurrentCreditLimit to mnCurrentCreditLimit.

   The only values available to pass to the business function are those from the key and additional data selections. When you pass these values to the data items in the column on the right hand side of the form, you send the corresponding data items from the workflow key and additional data selections to the function.

   The following example shows the data items that are passed into the function so it can update the customer's credit limit to the new credit limit.
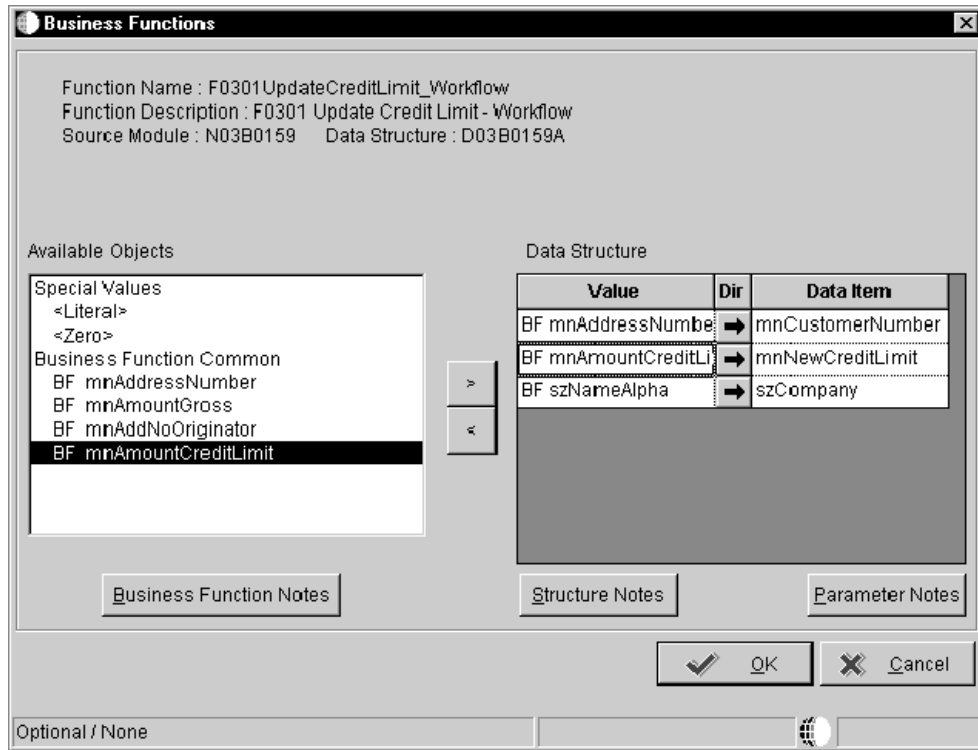
6. Click OK.

Adding a Run Executable Activity

A Run Executable activity starts a specific application, such as a word processing application or spreadsheet.

► **To add a Run Executable activity**

1. On Workflow Revisions, complete the following fields:

   - Activity

   - Description

2. Enter 10 in the Activity Type field for a Run Executable activity.

3. Choose the activity that you added, and then choose Event Rules Definition from the Row menu.
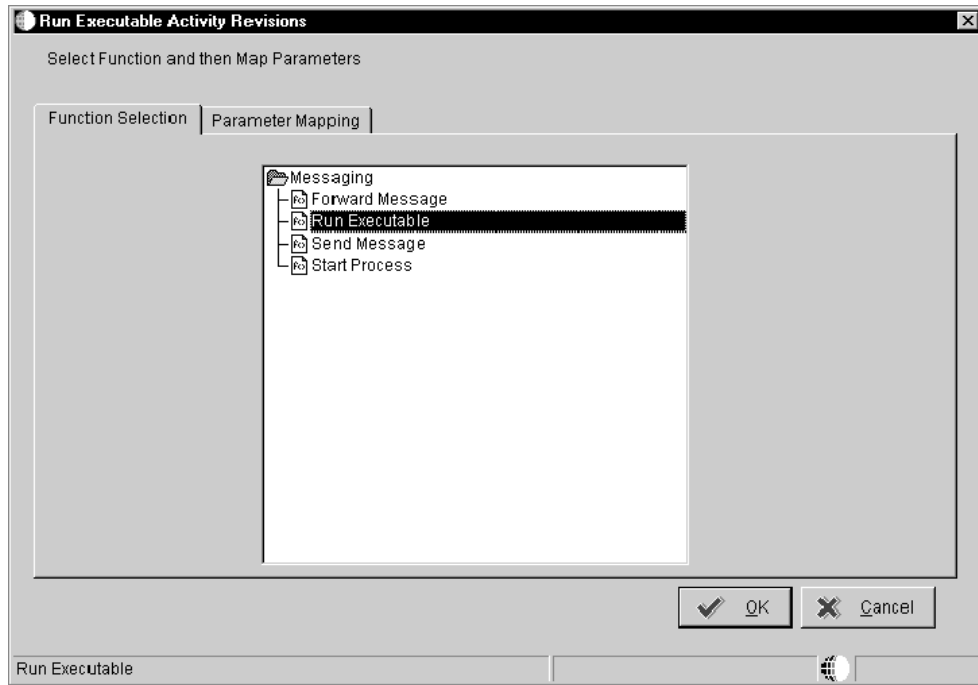
4. On Run Executable Activity Revisions, click the Function Selection tab, double-click the Messaging folder, and then choose Run Executable.

5. Click the Parameter Mapping tab.
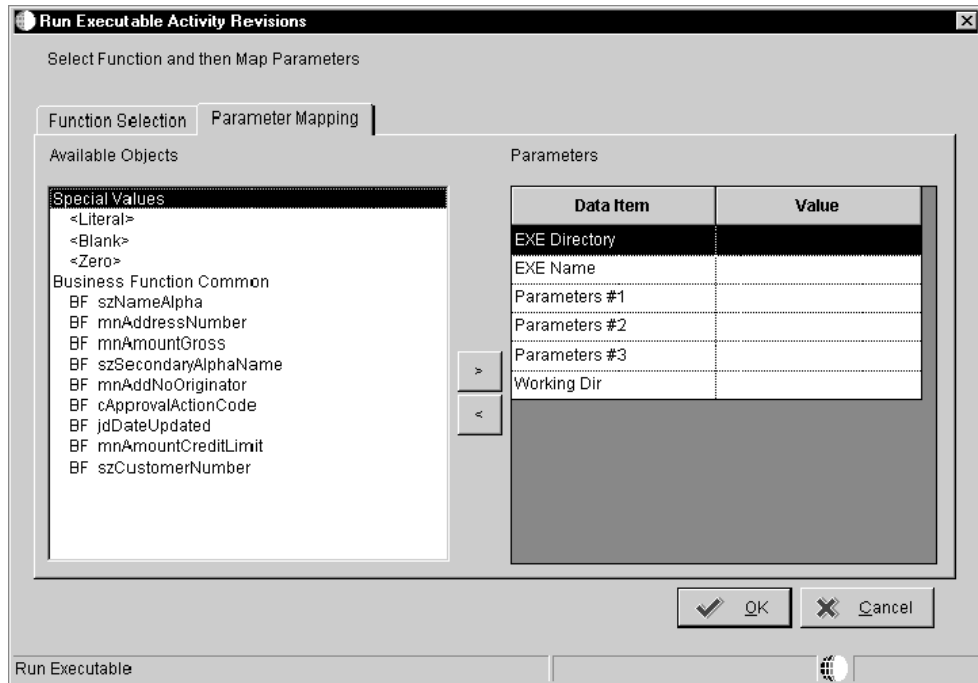
6. Choose the EXE Directory data item.

7. Choose <Literal> from the Available Objects list.

8. On Value, enter the location of the directory to which you want to map (this is the directory where the executable resides), and then click OK.

9. Choose each remaining data item in succession and map the parameters as necessary.

10. When you are finished, click OK.

Adding a Batch Application Activity

A Batch Application activity starts a O

► **To add a Batch Application activity**

1. On Workflow Revisions, in the detail area, complete the following fields:

   • Activity

   • Description

2. Enter 03 in the Activity Type field for a Batch Application activity.

3. Choose the activity that you added, and then choose Event Rules Definition from the Row menu.
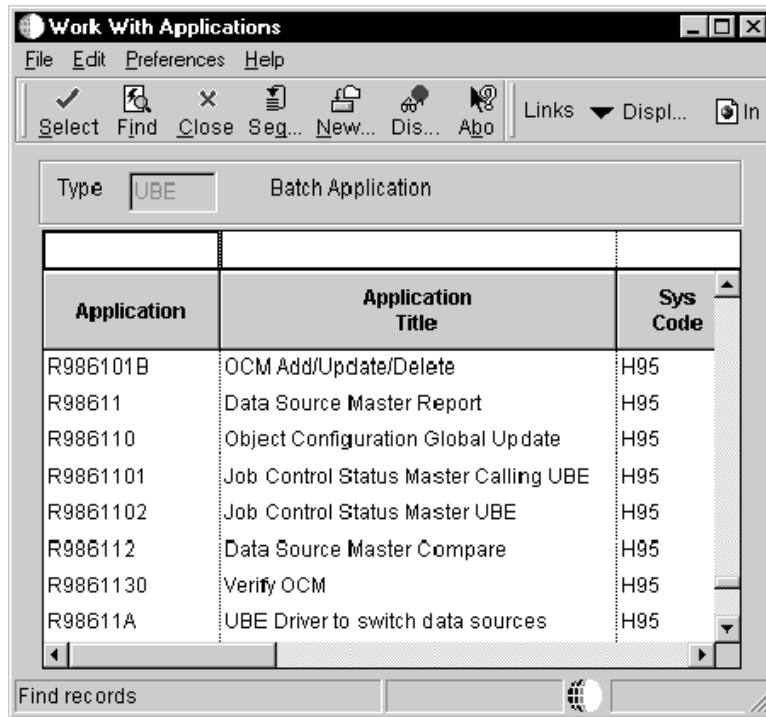
4. On Work With Applications, choose the batch process or the report that you want to attach to the activity and click Select.

5. On Work With Versions, choose the version of the batch process or report you want to use and click Select.
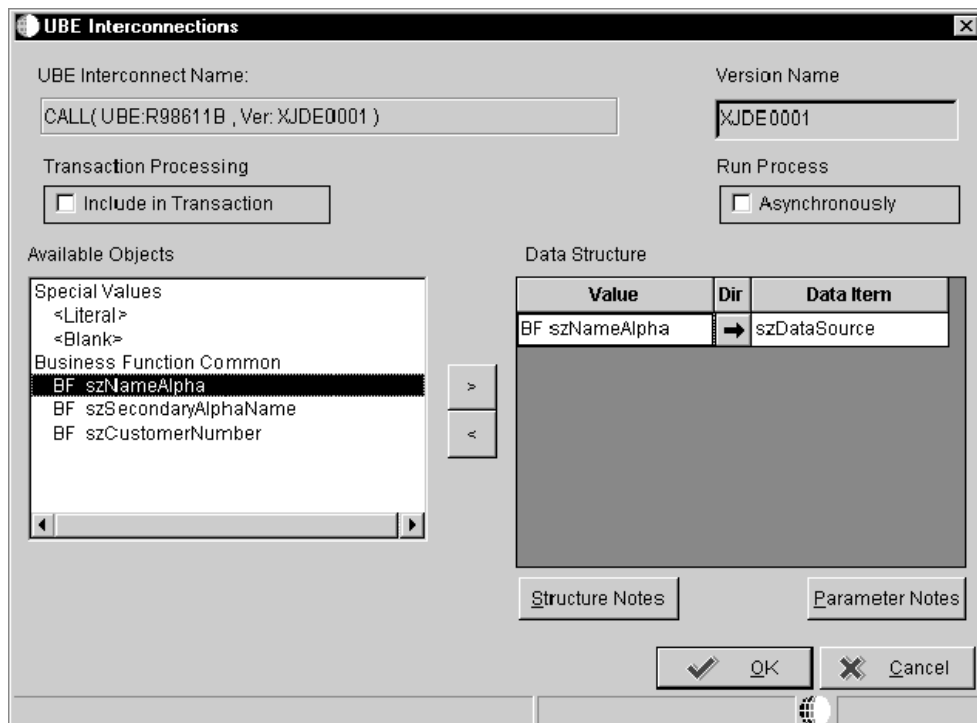
6. On UBE Interconnections, from the Available Objects list, choose the object that you want to pass. Click the > button to add the object to the Data Structure-Value column.

Note

You might not

7. Indicate the direction of data flow between Value and Data Items by clicking the Directional arrow between the two columns.

If you do not want data to pass between the activity and the batch process, set all Direction values to ⊘ by clicking on the icon in the Dir field, and then click OK.

See Also

❑ See *Creating Report Interconnections* in the *Development Tools* documentation

Adding a Recipient Condition Activity

To route messages in a distribution list, create a recipient condition used for escalation and when defining recipient rules. You can add a recipient condition at any point when you are creating a Workflow process.

► **To add a Recipient Condition activity**

🔍	Activity	Description	Activity Type	Description
	END	END	02	End
	UPDATECR	Update Credit Limit	05	Function
	RUNEXCEL	Run Excel Spreadsheet	10	Executable
	RUNCREHIST	Run Payment History Report	03	UBE
	RECCOND	Distribution Criteria for recipient rule	09	Recipient Condition
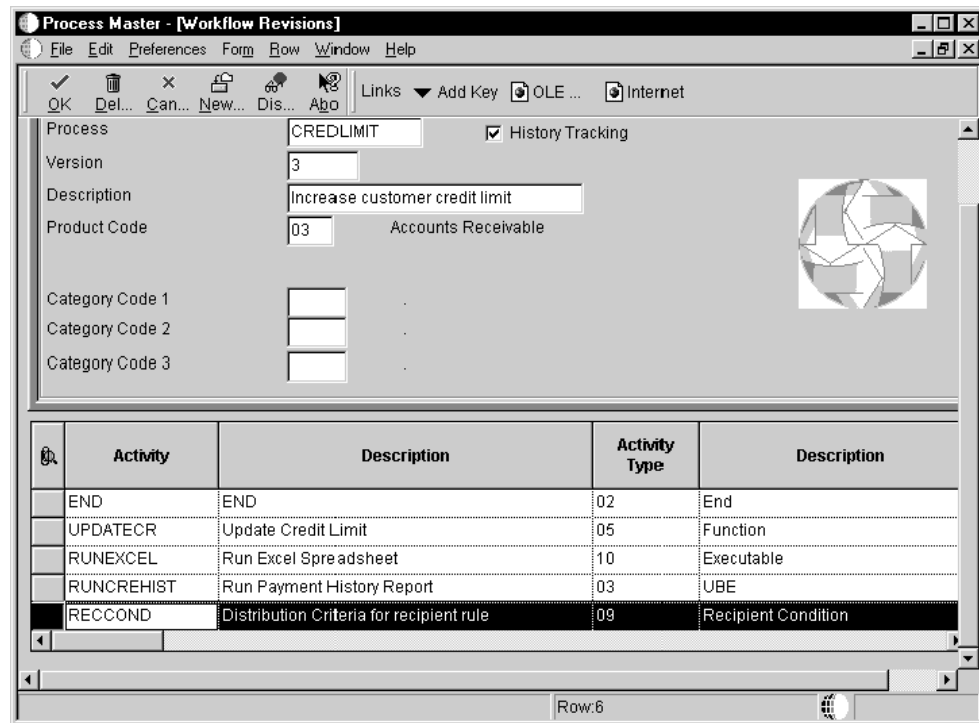
1. On Workflow Revisions, complete the following fields:

- Activity

- Description

2. Enter 09 in the Activity Type field for Recipient Condition.

3. Choose the Recipient Condition that you added, and then choose Event Rules Definition from the Row menu.

4. On Criteria Design, enter the logic that you want to add to the Recipient Condition and click Save.

Note

When attaching Recipient Conditions to recipient rules, make sure that all values sent to the recipient rule are covered by the Recipient Conditions. Otherwise you may have a value that does not satisfy any conditions, and no message is sent.

See Also

❑ *To add a Message activity with escalation*

❑ *Working with Recipient Rules*

Adding a Message Activity

The Message activity sends a message to other users in the system. Messages can contain shortcuts that users click to access other applications, such as the Generic Workflow Approval Form (P98805). Message activities can also contain a message template. Message templates (or data dictionary messages) can include substituted values that are populated from the process key and additional data selections as the body of the message. You can enter a new message template using Workflow Messages (P92002). See *Setting Up Message Templates* for more information.

To specify to whom a message is sent, and under what conditions it is sent to that recipient, you can attach distribution lists and recipient rules to the Message activity.

To add escalation to a Message activity, you must add escalation rules. Escalation rules are similar to recipient rules because they determine to whom or to which distribution list an escalated message is sent. However, when you add logic to an escalation rule, you can attach a new message to the original message and then define to whom or to which distribution list the escalated message is sent. You must also activate the Escalation Monitor

(R98810), which is a batch program that checks for Message activities that contain escalation and forwards any messages that have not been acted upon by a user to the next person in the distribution list. See *Activating the Escalation Monitor.*

To add a rec

If you want to attach an existing recipient rule that includes the distribution list and structure type, on Workflow Revisions, choose Recipient Rules from the Row menu. See *Working with Recipient Rules* for information about defining the distribution list and structure type.

Before You Begin

You should consider the following before adding a message:

❑ Which message template will the message use? If necessary, first create the message template. See *Setting up Message Templates* for information about how to enter a new message template.

❑ To which distribution list is the message sent? If necessary, first create the distribution list from Group Revisions (P02150). See *Setting Up Distribution Lists* for information about how to add a single-level or multiple-level distribution list.

▶ **To add a Message activity**

1. On Workflow Revisions, complete the following fields:

2. Enter 07 in the Activity Type field for a Message activity.

3. Choose the activity that you added, and then choose Event Rules Definition from the Row menu.

4. On Send Message System Function, double-click the Messaging folder on the Function Selection tab and choose Send Message.

5. Click the Parameter Mapping tab.

6. On Parameter Mapping, define the parameters for the following data items:

   • Recipient

     Indicate to whom the message will be sent by choosing the Recipient data item and then choosing the corresponding data item that contains the address book number to which the message will be sent.

     For example, you might map the recipient data item to BF mnSendToAddress. Or, if you want the message to be sent to a particular person, choose <Literal>, then enter the address book number of that individual on the Single Value form.

     If you want the message to be sent to a distribution list, add a Recipient Rule to this Message activity. If you do not add a recipient rule, the message will only be sent to the address book number and not to the members contained within.

     You can also enter an external mail address as a literal. Keep in mind, however, that you can only send text messages or messages that contain a template (DD Messages) to an external address.

   • Mailbox

     Indicate to which mailbox the message will be sent by choosing the Mailbox data item, and then choose the mailbox (or queue) to which you want the message delivered.

For example, you might choose the Credit Management queue for a credit limit approval message.

- Subject

  If you want to include a subject line for the message, choose the Subject data item and choose the corresponding data item that contains the subject text, if applicable. You can also enter a subject as a literal value. If you do not add a subject line to the message, the subject line will be blank when it appears in the Employee Work Center.

  If your message does not require a subject, choose <Blank>. You would most likely choose <Blank> when using a DD Message (a data dictionary message or message template), which would already contain a subject line.

  If you want to override the subject line of a DD Message, add a subject data item.

- Text

  If you want to add a message that contains static text, choose the Text data item and choose the corresponding data item that contains the text for the body of the message. You can also enter the text as a literal value. If you do not need to use the Text data item, choose <Blank>. Static text does not change.

  You can also use the Text data item to add supplemental text to a DD Message if necessary. This text will appear above the DD Message text when the user opens the message in the Employee Work Center.

- Active

  If you want to add a message that contains a shortcut, choose the Active data item and double-click <Define Active Message>.

  The system displays Work With Applications.

  In the Query by Example row, enter the application that you want to include as a shortcut in the message and click Find.

  For example, if you want to use the Generic Workflow Approval Form, enter P98805 and click Find. Double-click the row containing P98805.

  On Work With Forms, double-click the row containing the form that you want to use.

  For example, you might want to use the Workflow Approval form, which asks the recipient to approve or reject a change, or you might use the Pending Approval form, which notifies the originator that his or her change has been submitted for approval.

  On Form Interconnections, map the data structures to the appropriate available objects and click OK.

  See *Creating Form Interconnections* in the *Development Tools* documentation for more information about form interconnections.

  The system returns to Send Message System Functions.

- DDMessage

If you want to attach a template message, choose the DD Message data item and choose <Define Message> from the available objects. Be aware that attaching a shortcut to a message will suspend the workflow process until the message is acted upon.

On Text Substitution, enter the name of the message that you want to use in the Dictionary Item field and click Find.

For example, you might enter LM1235 for the Credit Limit Approval message.

From the Available Objects list, choose each data item that contains the value that you want to substitute into the message and click OK.

For example, the parameter &1 (Address Number) would be substituted with the data item BF mnCustomerNumber. Likewise, &2 would be substituted with BF szCustomerName.

- MessageKey

  If you want to include a message key, choose the Message Key data item and choose the corresponding data item to which you want the message key returned.

  A message key stores the serial number of the message that is sent.

7. After you have finished mapping the parameters for the Message activity, click OK.

► **To add a Message activity with escalation**

1. On Workflow Revisions, in the detail area, complete the following fields:

   - Activity

   - Description

2. Enter 07 in the Activity Type field for a Message activity.

3. Enter Y in the Escalation field.

4. Map the parameters for the Message activity. For instructions on how to do this, see steps 3 through 6 of *To add a Message activity*.

5. After you have finished mapping the parameters for the Message activity, click OK. You are returned to the Workflow Revisions form.

6. When you have completed adding activities on Workflow Revisions, click OK.

7. On Escalation Rules, complete the following fields and click OK:

- Escalation Rule

- Description

- Recipient Condition

  The recipient condition must be added as an activity type 09. See *Adding a Recipient Condition Activity*.

- Distribution List

  Enter the distribution list address book number to which the escalated message will be sent.

  You must include a distribution list when escalating messages.

- Structure Type

  You can use the same combinations of distribution lists and structure types for escalation rules as you do for recipient rules. See *Working with Recipient Rules* for more information about distribution list and structure type combinations.

Note

You must add event rule definition to the escalation rule because it defines the message that will be sent to the escalated persons. The attached message can also indicate that the original message is being forwarded to another user because the original recipient did not respond after a certain period of time.

Also, you can edit escalation information after you have added it to a Message activity by clicking Revise Escalation from the Row menu. Remember that you cannot edit escalation information or anything else within a process if it has been activated or if instances of the process exist.

Adding a Halt Process Activity

A Halt Process activity stops the process and specifies a period of time that must pass before the process can continue.

For example, suppose you have an employee termination process and an employee is planning to leave the company in the next two weeks. Certain events must happen as soon as the human resources department knows that this employee is leaving the company. The Benefits department must know that this employee should no longer have insurance coverage after a certain date, and the Information Technology department needs to know that computer and phone service for that individual must be terminated when the employee leaves.

In this scenario, the Workflow process is initiated when Workflow messages are sent that indicate that the termination of this employee occurs in two weeks. Then the process is put into a holding state by the Halt Process activity until the actual termination date is reached. Once the termination date is reached, the process resumes, and appropriate action is taken within the system.

When you set up a Halt Process activity, you specify either the hours and minutes or the date and time at which you want the process to resume.

If you add Halt Process activities to your process, you must also run the Escalation Monitor (Check for Expired Activities batch process) on a regular basis. You can run it either manually or through the OneWorld Scheduler application. If you do not run the Escalation Monitor, the process will remain halted. The escalation monitor is what starts the process back up after the date and time has been met.

► **To add a Halt Process activity**

```
Process Master - [Workflow Revisions]                              _ □ ×
 File  Edit  Preferences  Form  Row  Window  Help                  _ 回 ×
  ✓    ⬚    ×    ⬚    ⬚    ⬚    Links  ▼ Add Key  ⬚ OLE ...  ⬚ Internet
  OK   Del... Can... New... Dis... Abo

  Process              CREDLIMIT         ☑ History Tracking
  Version              3
  Description          Increase customer credit limit
  Product Code         03          Accounts Receivable

  Category Code 1      ____        .
  Category Code 2      ____        .
  Category Code 3      ____        .

  ⬚   Activity          Description              Activity    Description
                                                 Type
      RUNEXCEL    Run Excel Spreadsheet          10    Executable
      RUNCREHIST  Run Payment History Report     03    UBE
      RECCOND     Distribution Criteria for recipient rule  09  Recipient Condition
      MESSAGE     Send Message about credit limit  07  Message
      HALTPROC    Interrupt process              13    Halt Process

                                            Row:8
```

1. On Workflow Revisions, in the detail area, complete the following fields:

   • Activity

   • Description

2. Enter 13 in the Activity Type field for a Halt Process activity.

3. Enter either the Expiration Hours and Expiration Minutes or Expiration Date and Expiration Time at which you want the system to move to the next activity in the process. Then click OK.

   For example, you enter 8 hours and 30 minutes in the Expiration Hours and Minutes fields. If the escalation monitor is run to check for expired activities 8 hours and 30 minutes from when that activity within the process is started, the activity is expired. The system expires the halted condition and moves to the next activity.

   Note
   A Halt Process activity has no ER definition.

See Also

❑ *Activating the Escalation Monitor*

Adding an Interactive Application Activity

The Interactive Application activity invokes a OneWorld interactive application, for example Work With Journal Entries.

Interactive Application activities cannot be run on the server.

► **To add an Interactive Application activity**

- Activity

- Description

1. Enter 04 in the Activity Type field for an Application activity.

2. Choose the activity that you added, and then choose Event Rules Definition from the Row menu.
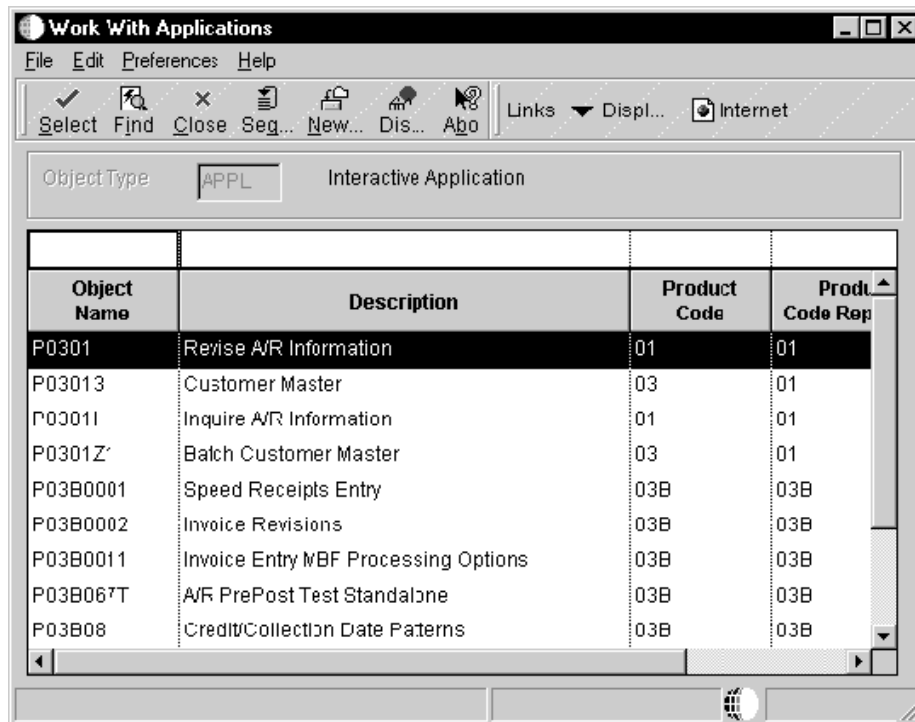
3. On Work With Applications, choose the application that you want the activity to invoke and click Select.
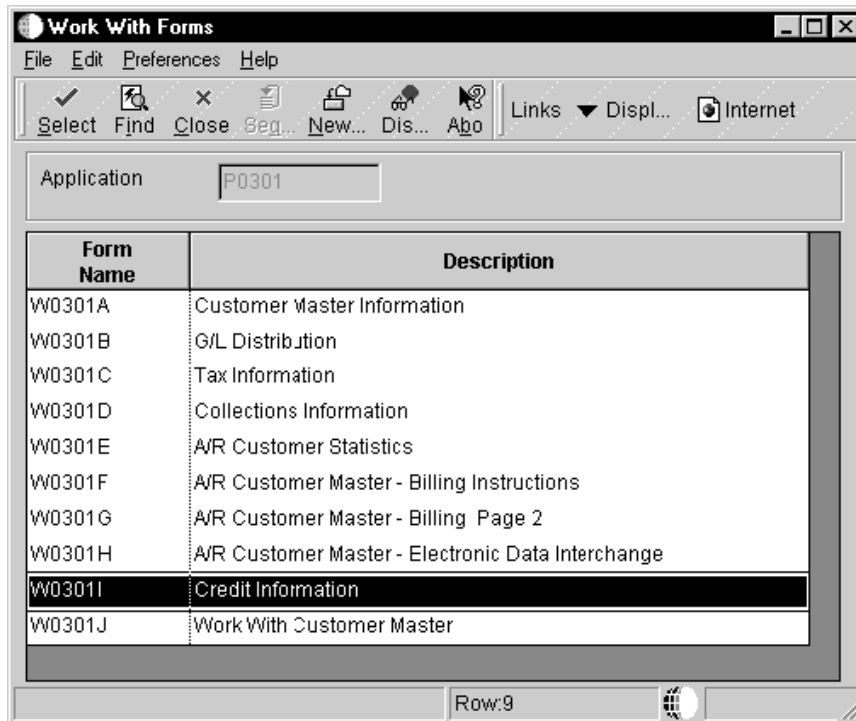
4. On Work With Forms, find and choose the form that you want to appear when the application launches and click Select.
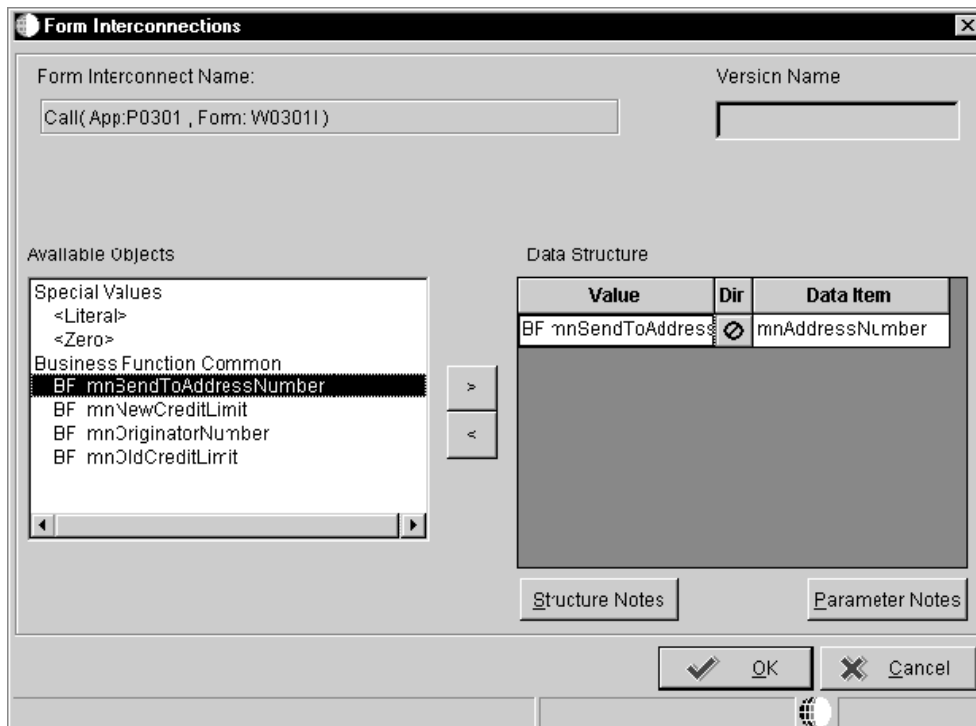
5. On Form Interconnections, from the Available Objects list, choose the data item from the primary or attribute data structures that you want to pass to the form that you are calling. Click the > button to add the object to the Data Structure-Value column.

6. Indicate the direction of data flow between the Value and Data Item columns by clicking the Directional arrow between the two columns.

7. If you do not want data to pass between forms, set all Directional values to j by clicking on the icon in the Dir column.

8. Click OK.

Adding a Process Activity

A Process activity starts another process, also referred to as a subprocess. A subprocess includes its own set of activities. When you add a Process activity, you are attaching an existing process to the main process.

► **To add a Process activity**

1. On Workflow Revisions, in the detail area, complete the following fields:

   • Activity

   • Description

2. Enter 06 in the Activity Type field for a Process activity.

3. Choose the activity that you added, and then choose Event Rules Definition from the Row menu.

4. On Sub Process Activity Definition, choose Start Process In Line on the Function
   Selection tab.

5. Click the Parameters Mapping tab.
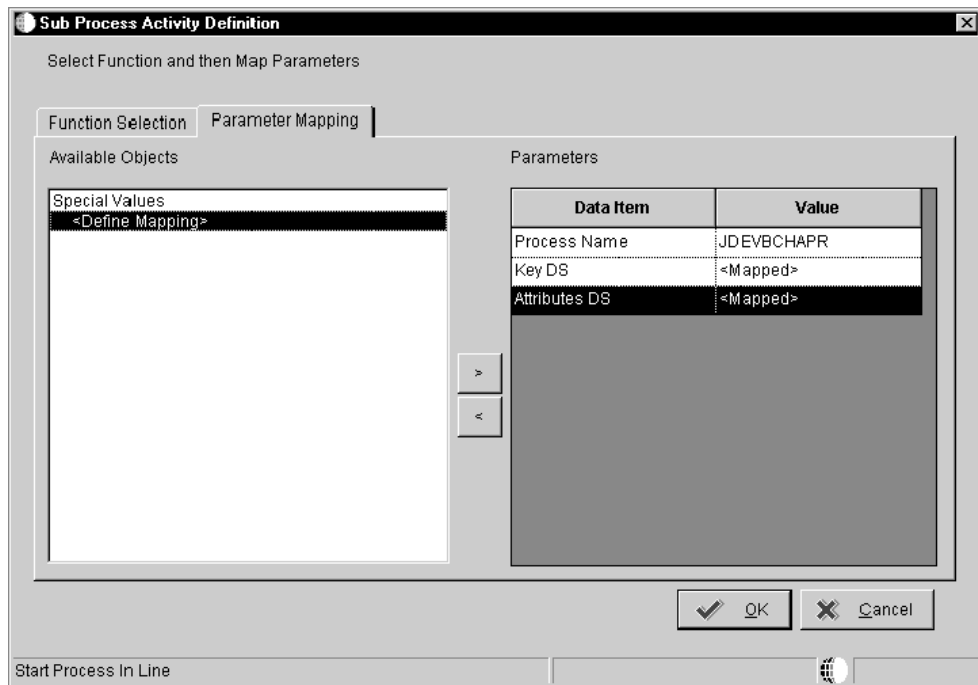
6. Map the available objects to the data item parameters as necessary and click OK.
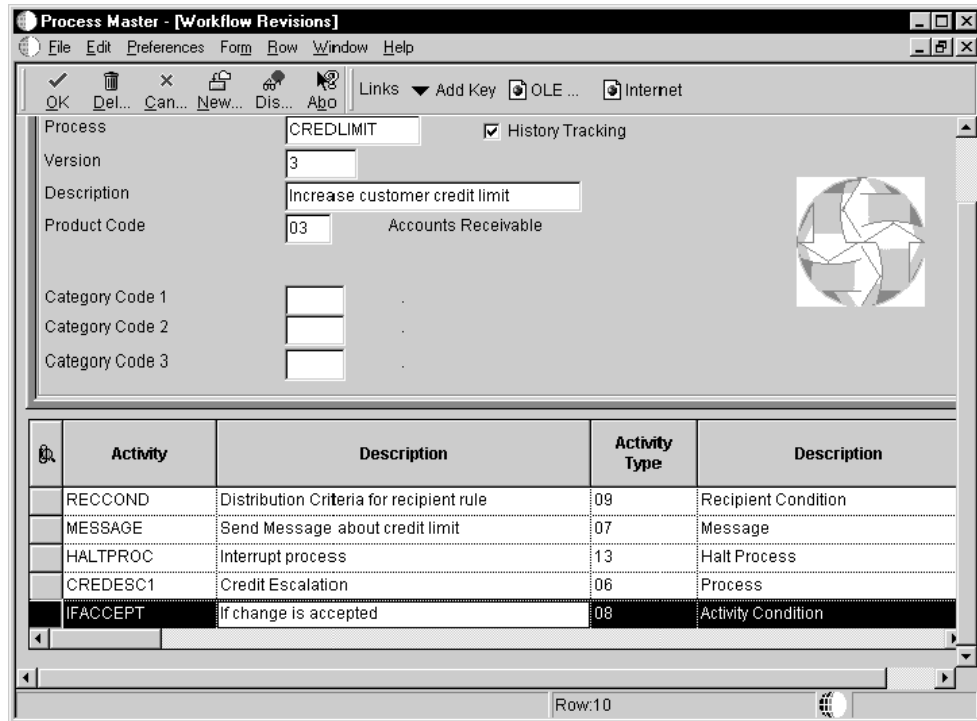
Adding Activity Conditions

Activity conditions are user-defined rules that determine which activity runs. For example, an activity condition called "IFAPPROVE" might trigger the system to invoke the activity that updates the database if a user approves a message, and then invokes the activity that sends a message notifying the originator that the message was approved. An activity condition called "IFREJECT" triggers the system to invoke the activity that sends a message notifying the originator that the message was rejected.

You use the Criteria Design form to add logic to an activity condition. The logic that you add determines the condition under which the next activity runs.

If you want to add an existing activity condition to an activity, use the Revise Relationships form. See *Resequencing Activities* for more information.

► **To add an activity condition**

1. On Workflow Revisions, complete the following fields:

    - Activity

    - Description

2. Enter 08 in the Activity Type field for Activity Condition.

3. Choose the activity condition that you added, and then choose Event Rules Definition from the Row menu.

4. On Criteria Design, enter the logic that you want to add and click Save.

Joining Activities

A join activity is an activity that can be reached by more than one activity through multiple transition paths in the Workflow process. A join activity can be either "and-join" or "or-join." An and-join activity indicates that the activity must wait for all previous activities to complete in order to begin. An or-join activity indicates that the activity must wait for only one of the previous activities to complete in order to begin. All activities are created as and-join by default – that is, the And-Join column in Workflow Revisions is defaulted to a Y when the activity is created.

Understanding Distribution Lists

You use distribution lists to group employees into categories for message routing purposes. For example, you might set up a distribution list for each department within your company so that you can send messages to each of those groups. Distribution lists are similar to distribution lists in third-party mail programs except that you can further define your distribution lists in OneWorld with:

- Threshold values
- Routing options
- Structure types
- Escalation hours and minutes

You can further define your distribution lists by using groups. When you use groups, you specify at what level within a distribution list that certain people exist. For example, you might organize four members of a distribution list into Group 1, five members into Group 2, and six members into Group 3. When the system sends a message to this distribution list, it first sends the message to Group 1 (the first level in the list), then sends it to Group 2, and sends it to Group 3 last because this group is at the lowest level within the list.

You can arrange distribution lists into a single-level structure, in which there is only one parent (such as the Accounts Receivable group) and the children (managers and employees) are listed directly underneath that parent. You can also arrange distribution lists into a

multiple-level structure with several parents, such as the president and all vice presidents within the company, with the employees listed under each of the parents.

Threshold Values

A threshold value is a static value assigned to an address book number within a structure type. A threshold value is used to determine the floor value of a range of values the process may send. Address book numbers with values falling within the range will be given a Message activity.

When you set up a distribution list, you can enter a threshold value for each employee within the list. The Workflow system uses threshold values to determine to whom an approval should be routed and at what point an approval should be moved to the next level within the distribution list. This value is compared against the associated data item value in the additional data to determine the routing. Threshold values must be ordered from least to greatest.

For example, if you use the associated data item AG (Amount-Gross), and enter a threshold value of 30,000 USD, the system compares the data item against the threshold value. If a customer's credit limit amount has been increased, the system sends a notification message regarding the change to those people whose threshold value is less than or equal to the amount in the Amount-Gross field on the Credit Information form. The data item used for the associated data item must be the same data dictionary item that is in the additional data structure.

You can also use groups in conjunction with threshold values. For example, in Group 1, two members might have threshold values of 10,000 USD, and two other members might have threshold values of 25,000 USD. Group 2 contains two members who have threshold values of 25,000 USD as well. If the system sends a message to the distribution list for a credit limit approval of 20,000 USD, the two members within Group 1 that have a threshold value of 10,000 USD receive the message.

See *Single-Level Distribution List Structure* for an illustration and further explanation about groups and threshold values.

Routing Options

You can specify conditional routing to control the path of approvals within a distribution list. These routing options are:

First Response Indicates that if a Workflow message is sent to the members of a group within a distribution list and all members in that group have the same threshold value, then only one of them must respond. After the first response is received by the Workflow system, messages to the other members of that same group are deleted from their queues, and the activity are marked as complete. For example, in a single-level structure, if someone such as Clerk 7101 responds to the message first, then messages are deleted from the other recipient's queues for that group level.

See *Single-Level Distribution List Structure* for an illustration of a single-level distribution list.

First Response is normally used when members of a group have the same authority in the company to grant the same approval.

If you do not choose this option, all members of the list to which the the Workflow message was sent must respond before the activity can be considered complete.

Higher Level Overrides	Indicates that a member in a higher level group can approve a change through the Process Activity Monitor. All lower level approvals are marked as Bypassed in the monitor and messages to other members are deleted from their queues. If you do not choose this option, then a member in the higher level group cannot approve the change before the lower group.
	See Monitoring Process Activity for more information.
	For example, if the Vice President (7401) approves a change through the monitor, all the messages that were sent to others within the distribution list below the Vice President in that group level are deleted from their queues. The message is then complete if the Vice President is the last person in the list. If he is not the last person in the list, the message goes to the next highest group member, and so on.
Authorization Required	Indicates that if a member in the distribution list initiates a Workflow transaction (such as a salary increase himself), it requires authorization from a higher level member. The higher level member receives the message even if the threshold value has not been reached. If you do not choose this option, no higher level person is required to view the message, assuming it is below the threshold value.
	For example, if Manager #2 (7202) approves a salary increase for himself, his employee information is not updated with that change unless his supervisor authorizes or approves the Workflow message.

Escalation Hours and Minutes

Along with threshold values and routing types, you can also add escalation hours and minutes for each employee within a distribution list. Escalation hours and minutes specify the amount of time that the recipient has to respond before a message is escalated to another recipient.

If you categorize members of a distribution list into groups, you must add the same escalation hours and minutes for each member within a group. For example, if one member of Group 1 has 8 escalation hours and 30 escalation minutes assigned to him, then all other members of Group 1 must have 8 escalation hours and 30 escalation minutes assigned to them.

Structure Types

Structure types can be user-defined and are used to categorize different groups of employees within a distribution list. Structure types further define the type of distribution list you set up. For example, you can set up a structure type of SAL for salary changes, then set up a distribution list in which those employees are all associated with the SAL structure type. Only those employees within that distribution list with the SAL structure type receive messages regarding salary changes.

You can use the predefined structure types of WFS, ORG, or EML to identify the distribution list as a Workflow group, an Organizational group, or e-mail.

See Also

❑ *Working with Recipient Rules* for more information about structure types

Single-Level Distribution List Structure

In the following example, the single-level distribution list structure is made up of a single level, but all the members within this distribution list are further organized into groups. A message will be sent to everyone within each group in the distribution list, one group at a time, starting with group 1, until the threshold is reached.

In addition, suppose Manager #1 (7201) enters a credit limit increase request for 24,000 USD. Because this value is under the threshold value for Group 3, approval messages will be sent to members of Group 2 because someone must approve them.

Single-Level Structure

Structure Type EML

Distribution List 7000

7101	Clerk #1	Group: 1	Threshold: 0
7102	Clerk #2	Group: 1	Threshold: 0
7103	Clerk #3	Group: 1	Threshold: 0
7104	Clerk #4	Group: 1	Threshold: 0
7201	Manager #1	Group: 2	Threshold: 20,000
7202	Manager #2	Group: 2	Threshold: 23,000
7203	Manager #3	Group: 2	Threshold: 26,000
7301	Director #1	Group: 3	Threshold: 30,000
7302	Director #2	Group: 3	Threshold: 30,000
7401	Vice President #1	Group: 4	Threshold: 40,000
7402	Vice President #2	Group: 4	Threshold: 40,000
7500	President	Group: 5	Threshold: 50,000

In this single-level distribution list structure, a message with a threshold of 25,000 is first sent to Group 1 (members 7101, 7102, 7103 and 7104), because their threshold values are less than 25,000. If any of these recipients reject the message, the activity completes and the message is not sent to the other groups. However, if all of these members approve the message, it is sent to Managers #1 and Managers #2 in Group 2 (members 7201 and 7202) for their approval because they are in the next highest group on the distribution list. Manager #3 and members in groups 4 and 5 (members 7203, 7301, 7301, 7401, 7402, and 7500) do not receive the message because their threshold values are greater than 25,000.

An exception to this is if the message originator is a member of the distribution list to which the message is sent. In this case, the message is sent to the first group above the originator's group. A message that is sent by 7202 and has a threshold value of 35,000 is first sent to Group 3 (members 7301 and 7302) because these members are in the group above 7201. Only after both 7301 and 7302 accept the message does the message activity complete because the next group (Group 4) does not meet the threshold value. The thresholds for group 4's are all greater than 35,000.

Multiple-Level Distribution List Structure

You use a multiple-level distribution list structure when you want messages to be sent to the parents within the distribution list first. After the parents in the list receive the message, the system then determines which members beneath that parent should receive the message based on threshold value. If no threshold values exist for the members beneath a particular parent, the message is sent to all members beneath that parent.

Note

Do not include an individual in more than one multiple-level list of the same structure type. This inclusion can result in circular or ambiguous hierarchies that Workflow is unable to reconcile. You must be in the distribution list when using multiple-level distribution list structures.

In the following example, each member of the distribution list has one direct parent. In a multiple-level distribution list structure such as this, the message originator must be a member of the distribution list to which the message is sent. In this case, the message is sent first to the originator's parent (7500) and is then sent to the next parent in turn, provided that the threshold value is met. A message with a threshold value of 45,000 that is sent by 7102 (Clerk #2) is first sent to 7201 (Clerk #1's manager). If the manager approves the message, then 7301, the director, receives the message. After 7301 approves it, the message is sent to 7402. The message activity is then complete because 7402's parent (7500) has a threshold value of 50,000, which is greater than the message's threshold value of 45,000. If any parent within this structure rejects the Message, the message activity completes.

Multiple-Level Structure

Structure Type ORG

Distribution List 7000	
7500 President	Threshold: 50,000
7401 Vice President #1	Threshold: 40,000
7402 Vice President #2	Threshold: 40,000
7301 Director #1	Threshold: 30,000
7201 Manager #1	Threshold: 20,000
7101 Clerk #1	Threshold: 0
7102 Clerk #2	Threshold: 0
7202 Manager #2	Threshold: 23,000
7103 Clerk #3	Threshold: 0
7302 Director #2	Threshold: 30,000
7203 Manager #3	Threshold: 26,000
7104 Clerk #4	Threshold: 0

See Also

❑ *Distribution List Scenarios*

Setting Up Distribution Lists

You set up distribution lists to group employees into categories for message routing purposes. In Workflow, you use Group Revisions (P02150) to add distribution list parents (such as managers) and then add children (such as employees who work for those managers) to those parents. You can also use Work With Distribution lists to view all the distribution lists of which a child is a member.

You can organize distribution lists into a single level or into multiple levels. For example, you use a multiple-level structure if you want messages to be sent to managers first. You use a single-level structure if you want to categorize members of a distribution list into groups. The way that you group the members of the list determines who should receive a Workflow

message first. In other words, members of Group 1 receive messages first, followed by Group 2, Group 3, and so on.

Distribution List Guidelines

Depending on how you set up distribution lists and threshold values, situations might arise where an action message is not sent to any member of a distribution list. In these cases, the application developer, workflow process designer, or both individuals should take steps to ensure that a process instance completes successfully. Specifically, developers must guarantee that they code for the possibility that when an action message is not sent, the approval code field in the attribute data structure has not been updated. The following two options should allow the process to complete successfully even when no action messages are sent:

- Make sure all additional data structure variables used to store action message results (the approve or reject response) are initialized with an appropriate default value. For example, use `A' for automatic approval and `R' for automatic rejection.

- Make sure any conditional rule that evaluates action message response variables after the action message activity considers values other than `A' or `R'. For example, if the approval code variable is not initialized, the field may have a blank value (` ') by default.

Do not include an individual in more than one multiple-level list of the same structure type. A user cannot be in the same structure type for more than one parent number.

Threshold values assigned to members of a group must be higher than the threshold values assigned to members of the next lower group. For example, the members of Group 2 must have higher threshold values than the highest threshold value in Group 1.

Before You Begin

❑ Make sure that all members that you want to include in the distribution list have been entered into the address book. You must also set up the distribution list's address number in Address Book before you set up the distribution list structure.

❑ Understand the two structures in which distribution lists can be set up. See *Understanding Distribution Lists* for more information.

► To add a single-level distribution list

From Workflow Management Setup (G0241), choose Group Revisions (P02150).

1. On Work With Di

Use the Structure Type field to narrow your search.

Group Revisions - [Address Parent/Child Revisions]

File Edit Preferences Window Help

OK Del... Can... New... Dis... Abo   Links ▼ Displ... Internet

Parent Number   7000   Accounting Group   ☐ First Response

Structure Type   WFS   Workflow Security   ☑ Higher Level Override

Associated Data Item   AG   ☐ Authorization Required

	Group	Address Number	Alpha Name	Threshold Value	Escalation Hours	Escalation Minutes	Rem
	1.00	7101	Clerk 1	0.00	4	0	
	1.00	7102	Clerk 1	0.00	4	0	
	1.00	7103	Clerk 1	0.00	4	0	
	1.00	7104	Clerk 1	0.00	4	0	
	2.00	7201	Manager 1	20,000.00	24	0	
	2.00	7202	Manager 2	23,000.00	24	0	
	2.00	7203	Manager 3	26,000.00	24	0	
	3.00	7301	Director 1	30,000.00	24	0	
	3.00	7302	Director 2	30,000.00	24	0	
	4.00	7401	Vice President 1	40,000.00	24	0	
	4.00	7402	Vice President 2	40,000.00	24	0	

Row:1

2. On Address Parent/Child Revisions, complete the following fields:

•   Associated Data Item

    The Associated Data Item must be the same as what you are comparing it to in
    the threshold value. Furthermore, it must match a data item in the additional
    data. For example, if you enter the Associated Data Item AG (Amount-Gross),
    and enter a threshold value of 30,000 USD, the system compares the data item
    amount against that threshold value amount. If a customer's credit limit amount
    has been increased, the system sends a notification message regarding that
    change to those people whose threshold value is less than or equal to the
    amount in the Amount-Gross field on the Credit Information form.

    Note

    If a Workflow process stops prior to an active message activity being run, verify
    that the lowest threshold value in the distribution list is lower than the Associated
    Data Item value. If the lowest threshold value in the distribution list is not lower
    than the Associated Data Item value, the process does not have anywhere to
    send the message because all of the possible recipients are out of the specified
    threshold range.

•   Group

    If you want to group members within the distribution list, enter the number of the
    group in which they reside.

•   Address Number

- Threshold Value

3. If this distribution list will be used in conjunction with a message that contains escalation monitoring, complete the following fields:

   - Escalation Hours

   - Escalation Minutes

     Enter the number of hours and minutes that a message can remain unanswered before it is escalated to the next recipient.

     Note

     Escalation hours and minutes must be the same for all members of a group. For example, if member 7101 has 4 escalation hours then 7102, 7103, and 7104 must also have 4 escalation hours because they are all members of Group 1.

     ---

4. Enter the beginning and ending effective dates for each member of the distribution list by completing the following fields:

   - Begin Eff Date

   - End Eff Date

     Members within the distribution list are not sent messages unless the current date falls between the beginning and ending effective dates that you specify in these fields.

5. Specify the transitional routing value by choosing one of the following options:

   - First Response

   - Higher Level Override

   - Authorization Required

6. Click OK.

▶ **To add a multiple-level distribution list**

From Workflow Management Setup (G0241), choose Group Revisions (P02150).
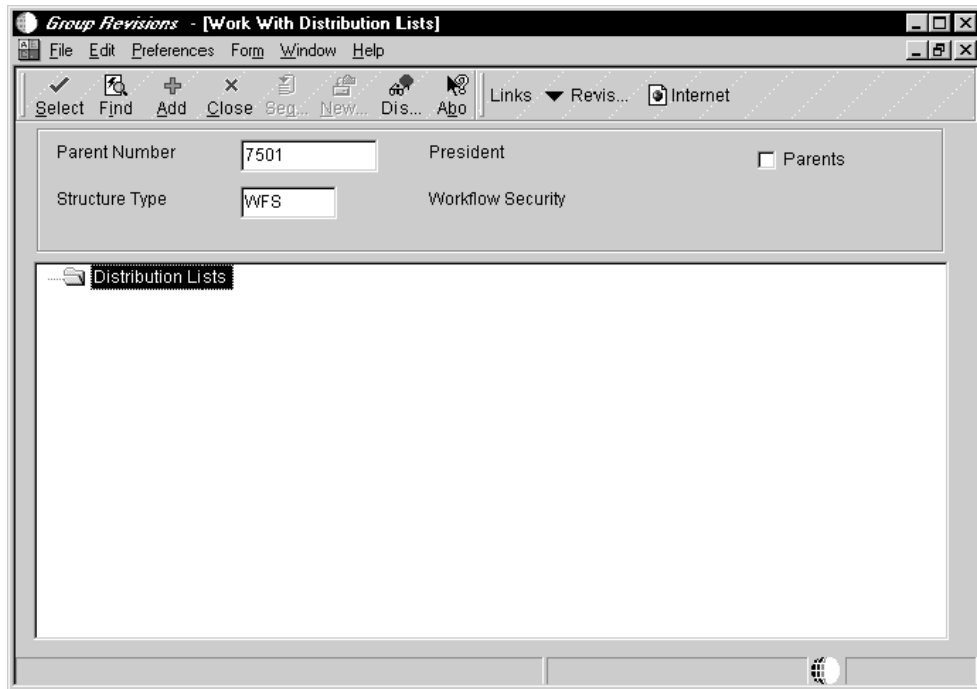
1. On Work With Distribution Lists, find the parent within a distribution list to which you want to add a level.

2. Click Add.
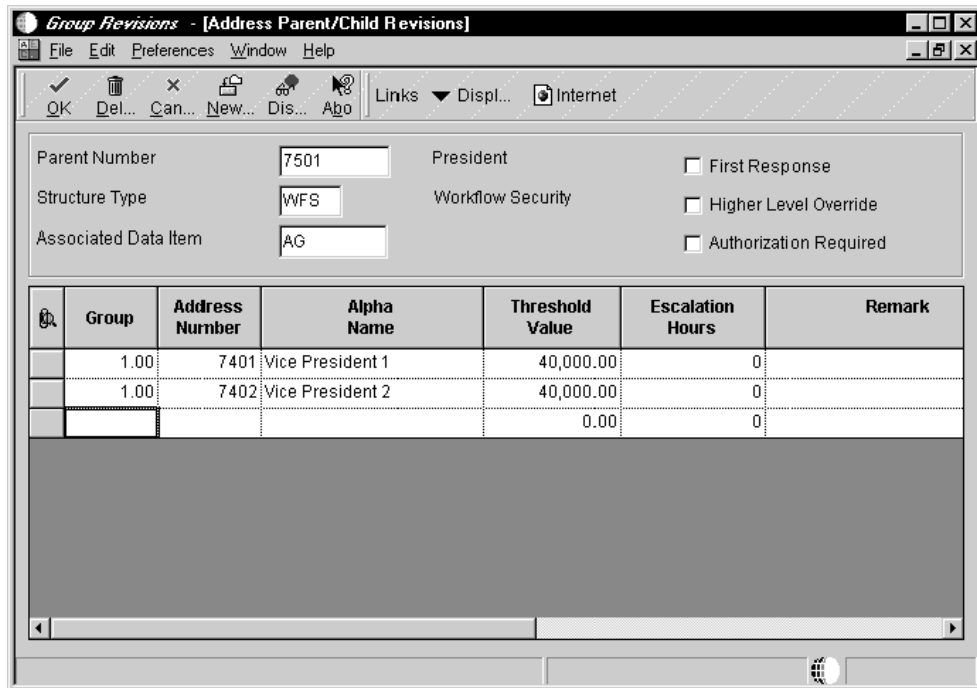
3. On Address Parent/Child Revisions, add members to the parent by following the steps described in adding a single-level distribution list, except that you should enter 1 in the Group field.

    You enter 1 in the Group field for every member within a multiple-level distribution list structure.

4. Click OK.

5. To add a level beneath the member when you just added (for example, if you added a president and you want to add vice presidents beneath him), return to Work With Distribution Lists, enter the president's address book number, click Add, and then enter the vice presidents.

    Each time that you add another level to the distribution list, you inquire on the address book number under which the next member in the distribution list appears, and then add members to the list.

    When finished, your multiple-level distribution list might look something like the following example.
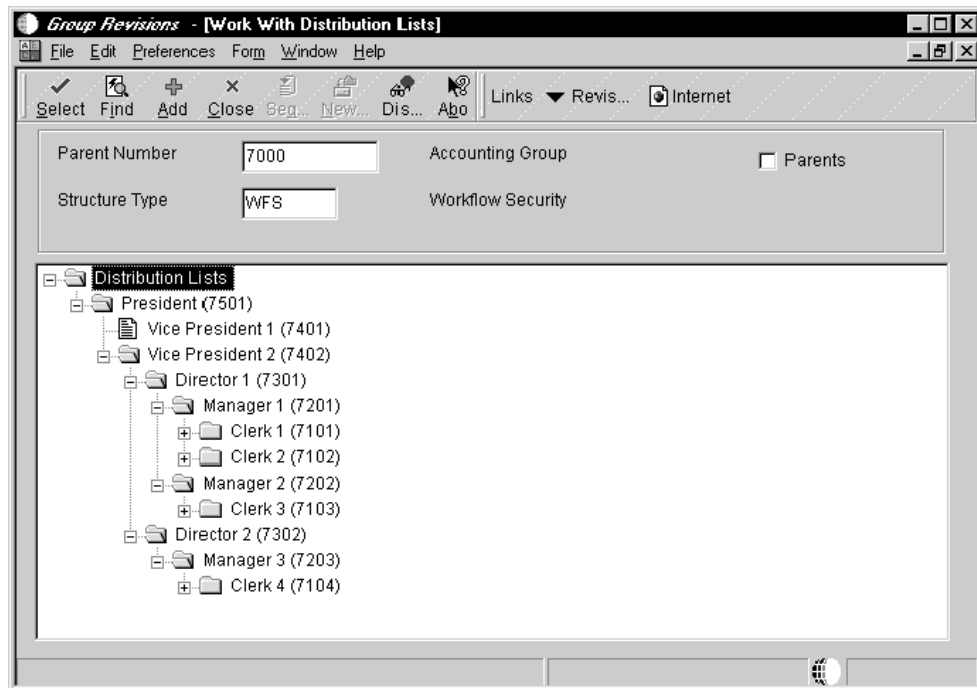
► **To view the distribution lists of which a child is a member**

From Workflow Management Setup (G0241), choose Group Revisions (P02150).

1. On Work With Distribution Lists, complete the following fields:

    •   Parent Number

        Enter the address book number of the child for which you want to view all distribution lists.

- Structure Type
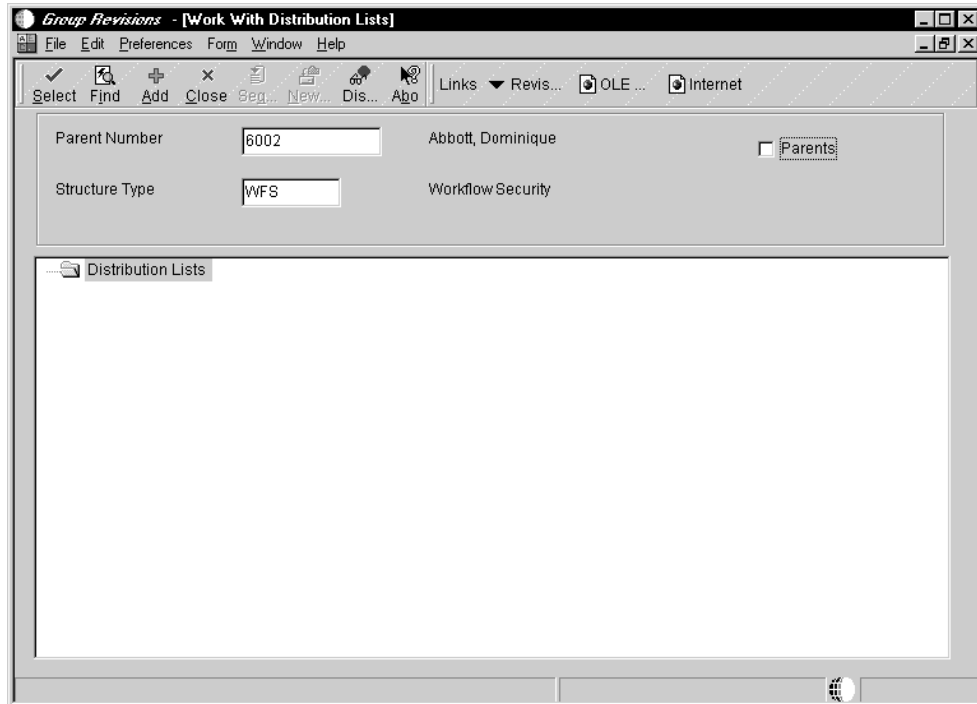
2. Turn on the following option, and then click Find:

- Parents

The system displays the name of each distribution list of which the child is a member. In the following example, Dominique Abbot is a member of the Engineering and Accounts Receivable Department distribution lists.
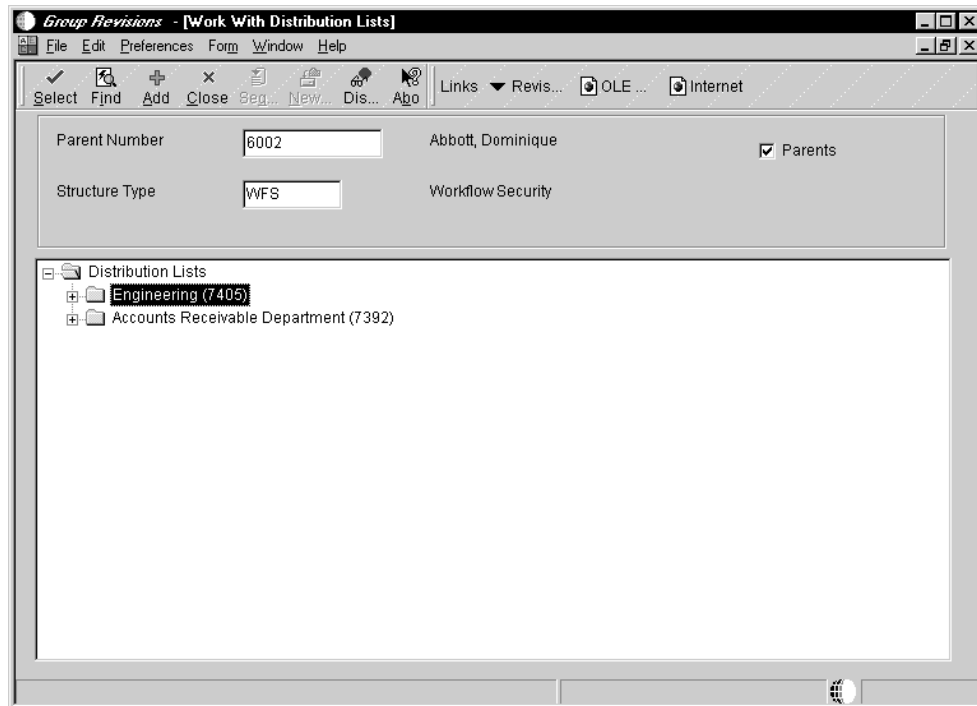
See Also

- ❑ *Adding a Recipient Rule* for information about recipient rules
- ❑ *Adding a Message Activity* for information about creating message activities with escalation

Working with Recipient Rules

Recipient rules determine to whom or to which distribution list a message is sent. You add the logic to a recipient rule that determines at what point a message is routed to a certain distribution list or recipient. When you create message activities (for example, messages that a recipient can approve or reject), you can add recipient rules to them.

A Recipient Condition contains criteria the system uses in a workflow. You can create a Recipient Condition on Workflow Revisions using activity type 09. After a Recipient Condition is created, you can use it in a recipient rule; however, a recipient rule does not require a Recipient Condition. A recipient rule can be defined in a distribution list and structure type.

See Also

- ❑ *Adding a Recipient Condition Activity*
- ❑ *Setting Up Distribution Lists*

How Recipient Rules Work

As an example, you have an accounting department distribution list and a payroll department distribution list, and you want messages to be sent to one or the other based on a rule. In this case, you might set up a Recipient Condition called IFACCTG that uses the customers

address book numbers as the criteria to determine where to send messages. You might add logic to the rule that tells the system that if the customer number is equal to a range of 1 through 3001, then messages regarding those customers should be sent to the accounting department's distribution list.

The following example shows the logic for the IFACCTG recipient condition:
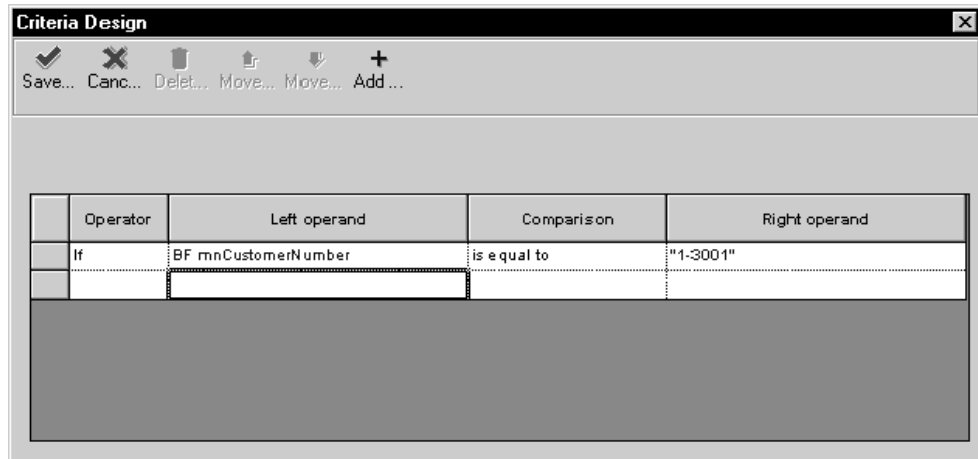
You enter logic to further define a recipient rule. You can also use a combination of distribution list and structure type to determine to whom a message is sent. The following explanations describe when you might want to use a distribution list only, a combination of distribution list and structure type, or structure type only when defining a recipient rule.

How Distribution Lists and Structure Types Work

The system evaluates the criteria contained in the recipient rule to determine to which distribution list or individual to send a Workflow message. The first criterion that evaluates to true is the distribution list or individual that will be used. If none of the criteria evaluates to true and you have not entered a rule name in the Rule field on Recipient Rules, the structure type is used to determine to whom the message is sent.

For example, if a distribution list (whether it is a distribution list or an individual) and structure type exist for a rule, the system sends the message to the appropriate member in that distribution list. If no distribution list exists, but a structure type exists, the system finds the distribution list with that structure type of which the sender is a member. It then looks to the parent of the sender in that list to determine to whom the message should be sent. If only a distribution list exists for a rule, the message is sent to the address number specified in the Distribution List field.

Three examples of the combinations of distribution lists and structure types that you can use when you set up a recipient rule follow:

Distribution List Only

When you enter only an address number in the Distribution List field on the Workflow Recipient Rule Revisions form, the system sends the message directly to the address number that you entered.

Note

If the address number is the parent number of a distribution list (for example, 7000 - the Accounting Group), the message is sent to only the top level of the distribution list. Therefore, no members of that distribution list receive the message.

The following illustration shows a recipient rule that uses only a distribution list:

Structure Type Only

When you enter a structure type but no distribution list, the system finds the address number for the person who originated the initial request, then finds the structure type that you entered in the recipient rule of which the originator is a member. Using the structure type, it finds all the parents to which the originator belongs and then looks at the parents in that structure type to determine to whom the message is sent.

For example, suppose the originator (such as 7101 - Clerk #1) is a member of structure type WFS. The system looks up the structure from Clerk #1 in structure type WFS to find parents with the threshold value that the value associated with the activity falls between to determine to whom the message is sent. In this scenario, the message is sent to 7101's manager, 7201 (Manager #1). If 7201 approves the message, the system then sends it to 7301. If 7301 approves the message, it then sends it to 7402 (Vice President #2), and so on up the distribution list. The message is never sent to a level below 7101, such as 7102 (Clerk #2) or 7202 (Manager #2).

See *Multiple-Level Distribution List Structure* for an illustration and more information about multiple-level distribution lists.

Note

If you have set up a multiple-level distribution list, you must enter only the structure type when you set up a recipient rule.

The following illustration shows a recipient rule that uses only the Structure Type:
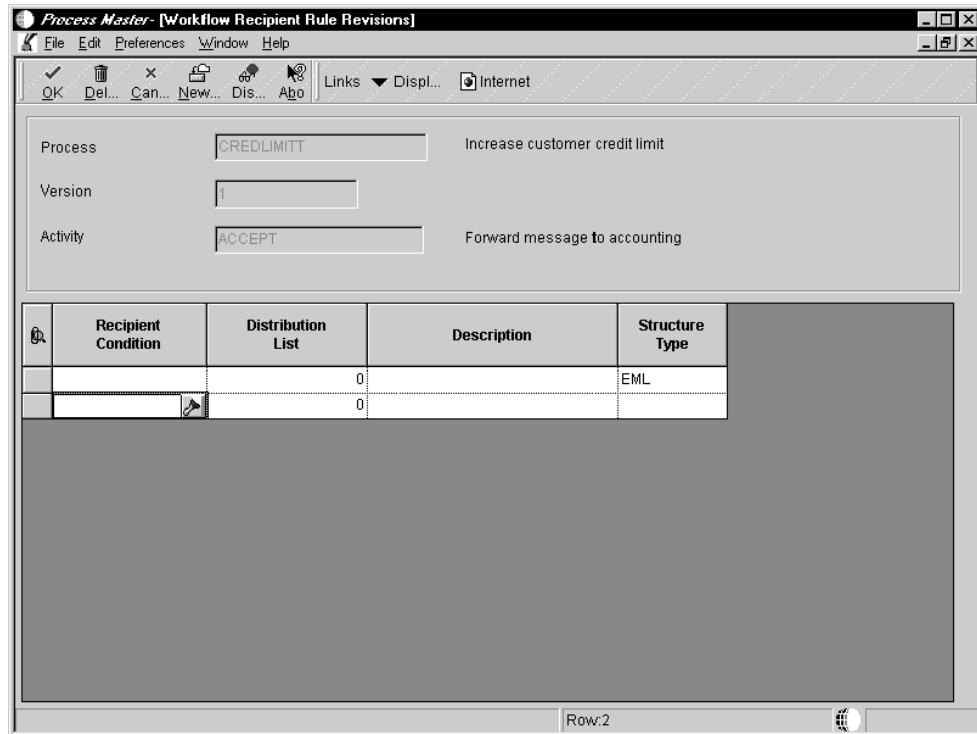
Typically, employees are not attached to more than one structure type. For example, you would not have an an employee attached to both distribution list 7000, structure type EML, and distribution list 7384, structure type EML. However, you can have an employee attached to a structure type of ORG who is also attached to the structure type WFS.

Distribution List and Structure Type

When you include a distribution list and a structure type, the system determines to whom the message is sent by looking down the structure for the individuals with the appropriate threshold value between which the value associated with the activity falls between. The distribution list and structure type combination that you enter must be a valid combination in the Address Book Parent/Child table (F0150).

For example, suppose you enter the distribution list 7000 (Accounting Group) and structure type EML. If an approval message is sent to this group specifying that a customer's credit limit needs to be raised to 40,000 USD, the system first finds the employees within the Accounting Group distribution list with the structure type EML. Then it finds employees within that structure type with threshold values less than or equal to 40,000 USD and routes the message directly to them for approval.

If you have created a single-level distribution list, you use both a distribution list and structure type for the recipient rule.

Adding a Recipient Rule

You attach recipient rules to a message activity on the Workflow Revisions form. When you add a recipient rule, you must define it using one or more of the following:

- Recipient condition
- Distribution list
- Structure type

Note

If you enter a literal or any other parameter for the recipient when you add a Message activity, you do not have to add a recipient rule. If you add a recipient rule to a Message activity that already contains a parameter for the recipient, the recipient rule overrides the parameter that you entered.

► **To add a recipient rule**

1. On Workflow Revisions, choose the Message activity to which you want to attach a recipient rule.

2. Choose Recipient Rules from the Row menu.

3. On Workflow Recipient Rule Revisions, complete one or more of the following fields and click OK.

- Recipient Condition

  You must add a Recipient Condition before you attach a recipient rule that uses Recipient Conditions; however, a recipient rule does not require a Recipient Condition. A recipient rule can use multiple Recipient Conditions. See *Adding a Recipient Condition Activity*.

  Enter the name of the Recipient Condition that you want to use. Click the visual assist to view Recipient Conditions.

- Distribution List

  Enter the address book number of the distribution list or individual user to whom the message is sent, based on the Recipient Condition.

- Structure Type

Resequencing Activities

When you add Activities and Activity Conditions to a process, the system automatically sequences and creates relationships between them. However, you might want to resequence the activities and conditions and, in so doing, change the relationships between them.

You can also add activity conditions to activities at this point, as well as access the Scheduler to schedule the Check for Expired Activities batch process. To schedule a job, choose Scheduler from the Form menu on Workflow Revisions.

The following task describes an example of how you might resequence activities for the Credit Limit Approval process.

► To resequence activities

1. From Workflow Revisions, click the Relationship tab to view the current activity relationships.
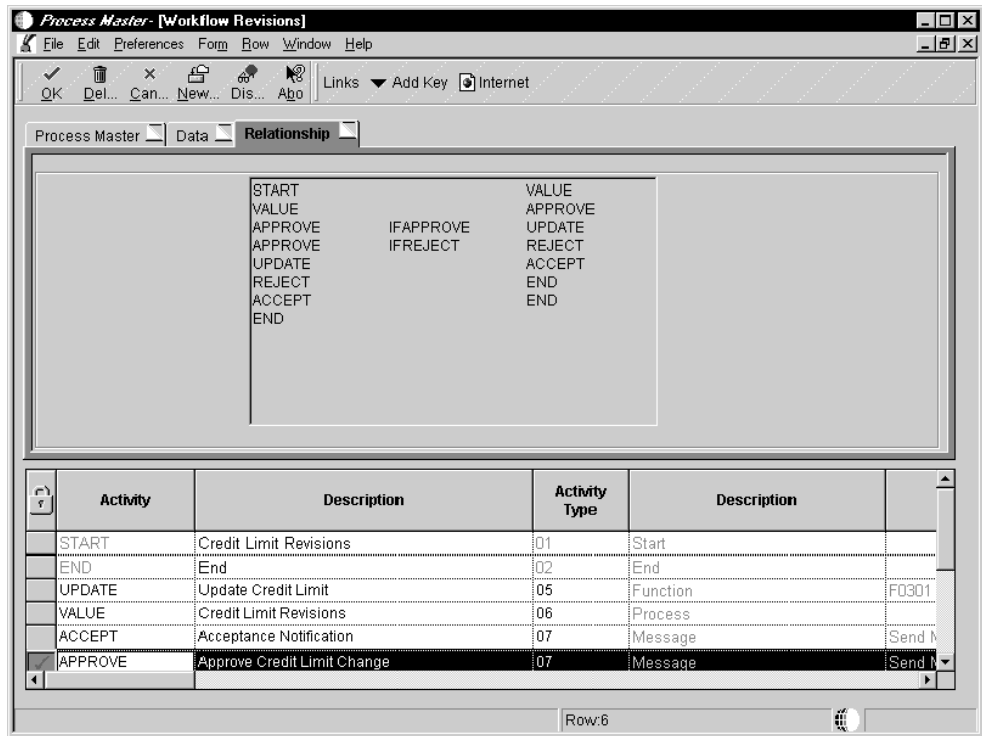
2. Choose Revise Relationship from the Form menu.
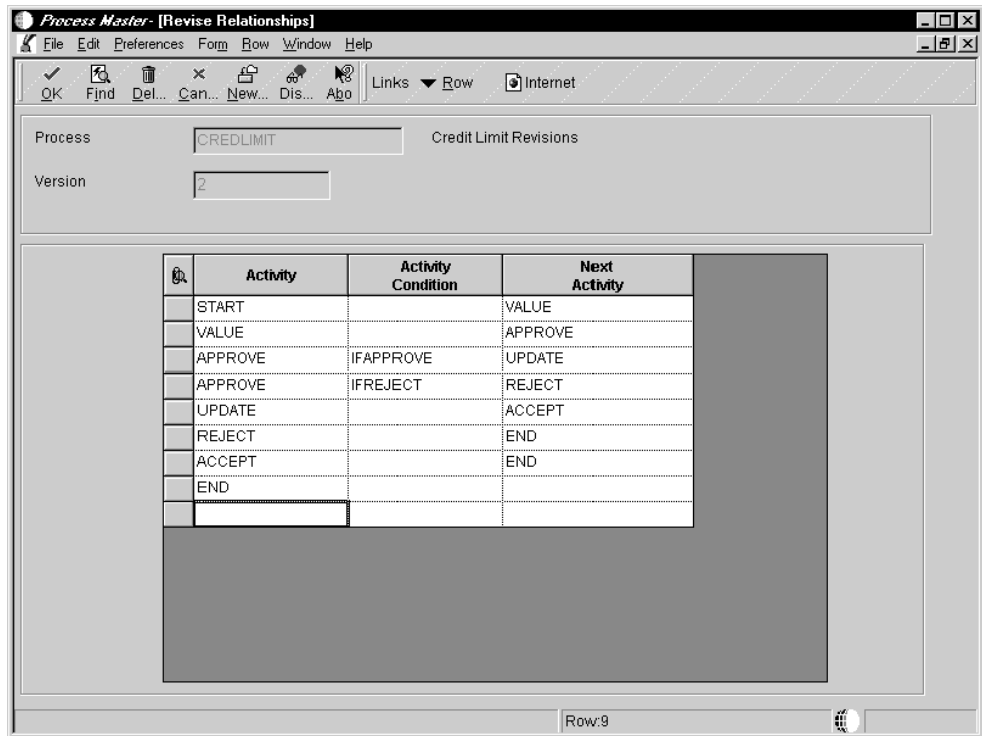
3. On Revise Relationships, sequence the activities in the order in which you want them to execute. For example, the next activity after Start might be Approve.

4. On the next row, in the Activity field, enter the same activity that appears in the Next Activity column in the row above this one. In this example you enter Approve in the Activity field, and then enter any activity conditions that apply to that activity in the Activity Conditions field, such as IFAPPROVE. The IFAPPROVE activity condition tells the system that if a user approves a message for a credit limit increase, the system invokes the next activity.

5. Add the next activity after the IFAPPROVE condition in the Next Activity field, such as UPDATE. The UPDATE activity tells the system to update the database if the message is approved.

6. You can add more than one activity condition to an activity. In this example you can add the IFREJECT activity condition to the Approve activity. The IFREJECT activity condition tells the system that if the request to increase a customer's credit limit is rejected, the system should invoke an activity other than the UPDATE activity.

   In this case, the next activity to be run after the IFREJECT activity condition is REJECT, which sends a message to the originator of the request, notifying him or her that the credit limit increase has been rejected.

7. In the next row, in the Activity field, enter REJECT. In the Next Activity field, add the next activity that is invoked, such as END, which ends the flow of activities.

8. When you are finished resequencing and adding relationships between the activities and activity conditions, click OK.

   If a Next Activity does not have a corresponding Activity associated with it, an error message appears. The system will not save the updated information in Advanced Setup until you ensure that there are relationships between all activities in the process.

Note

Activity information is stored in the F98810 table and activity relationship information is stored in the F98830 table. If you click OK on Advanced Setup after resequencing the activities and conditions, and an activity is not represented in the F98830 table, the system displays a message indicating that the flow is noncontinuous.
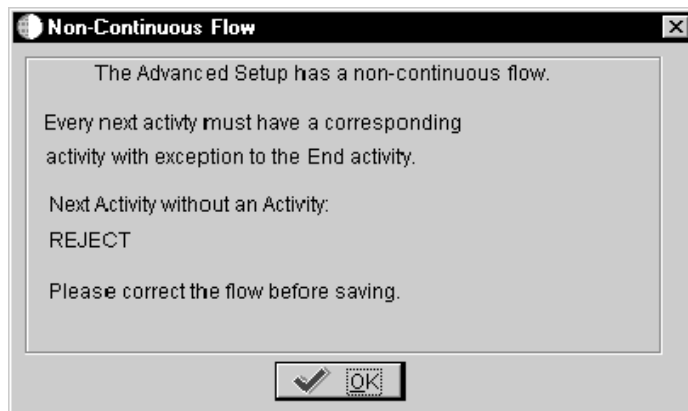
If you do not use an existing activity, the system asks for confirmation that you want to delete that activity from Advanced Setup.
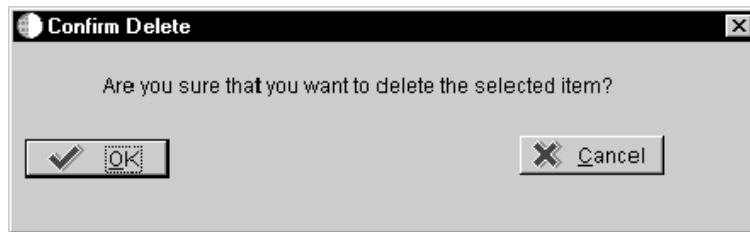
Activating a Workflow Process

After you create the activities within the process, add activity conditions, and distribution lists, you must activate the process before you can attach it to an application.

When you activate the Workflow process, the system automatically verifies that all subprocesses and activities within the process contain a start and an end point. It also verifies that all activities that need event rules contain event rules, and that relationships exist between all activities and activity conditions. If the process cannot be verified, it is not activated. You cannot activate a process if it contains errors.

When a Workflow process is active, you can only edit recipient rules and activity descriptions. If you must edit an active Workflow process or one that contains instances, you must purge the process instance data if present, deactivate the process, and then edit it. You can also copy a version of a process and rename it.

► **To activate a Workflow process**

1. Find the workflow process you want to modify in the Object Management Workbench.

   For more information about how to use the Object Management Workbench, see the *Object Management Workbench* in the *Development Tools* documentation.

2. Move the workflow process to a project folder.

3. Click the workflow process, and then click the Design button in the center column.

4. On Workflow Design, click Change Workflow Status to toggle between inactive and active.

5. Click Workflow Revisions to access the Workflow Revisions form to make additional changes.

Attaching a Process to an Application

After you have created and activated a process, you attach the process to an event within an application using Event Rules in Form Design Aid (FDA). You need only to define the system function Start Process in an application to attach a Workflow process. The Start Process system function invokes the activities within the process.

In the Credit Limit Changed example, the Start Process system function is attached to the Update to DB Before event in the Revise A/R Information program (P0301) on the Credit

Information form. In this example, the Start Process system function invokes the activities that send an approval message and update the credit limit.

You can also at

In this example, the highlighted row
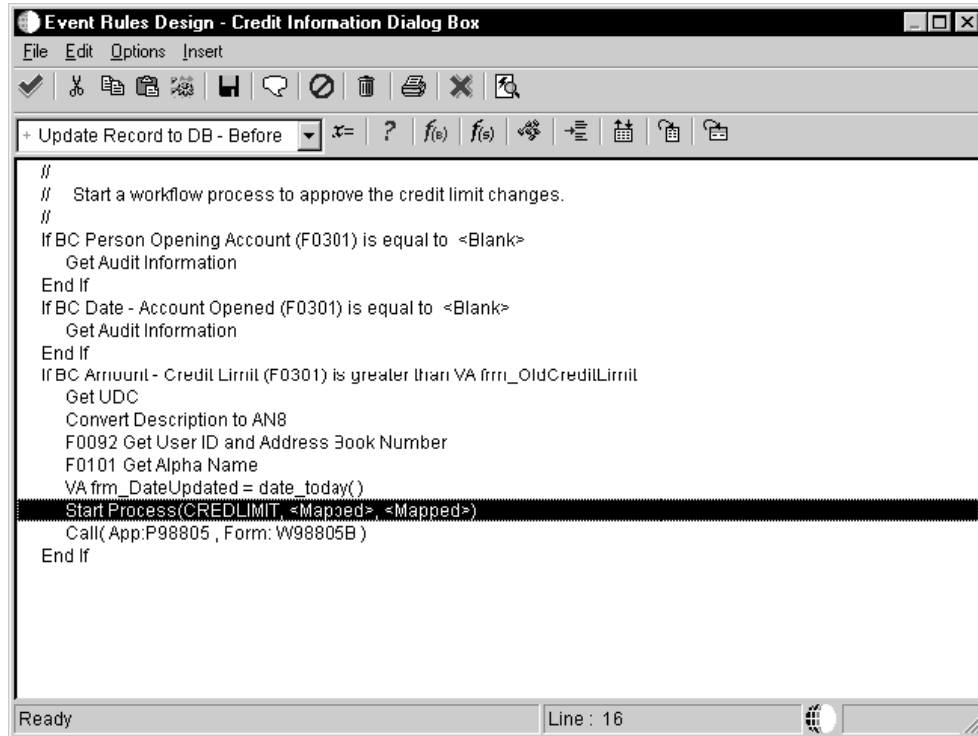
The following tasks explain how to attach the process called CREDLIMIT to an application and how to call a "pending approval" message that appears within the Credit Master application when a user makes a change to a customer's credit limit. This example is specific to the Credit Limit Changed process; the way in which you attach your processes varies.

Before You Begin

- ❑ Understand how to attach event rules to applications. See *Event Rules* in the *Development Tools* documentation.

▶ **To attach the Start Process to an application**

1. From the Object Management Workbench, find and check out the application. For example, check out P0301 - Revise A/R Information.

   See *Object Management Workbench* in the *Development Tools* documentation for detailed information about navigating in the Object Management Workbench.

2. Click the Design button in the center column.

3. On Interactive Application Design, click the Design Tools tab.

4. Click Start Form Design.

5. Find the form to which you want to attach the Start Process.
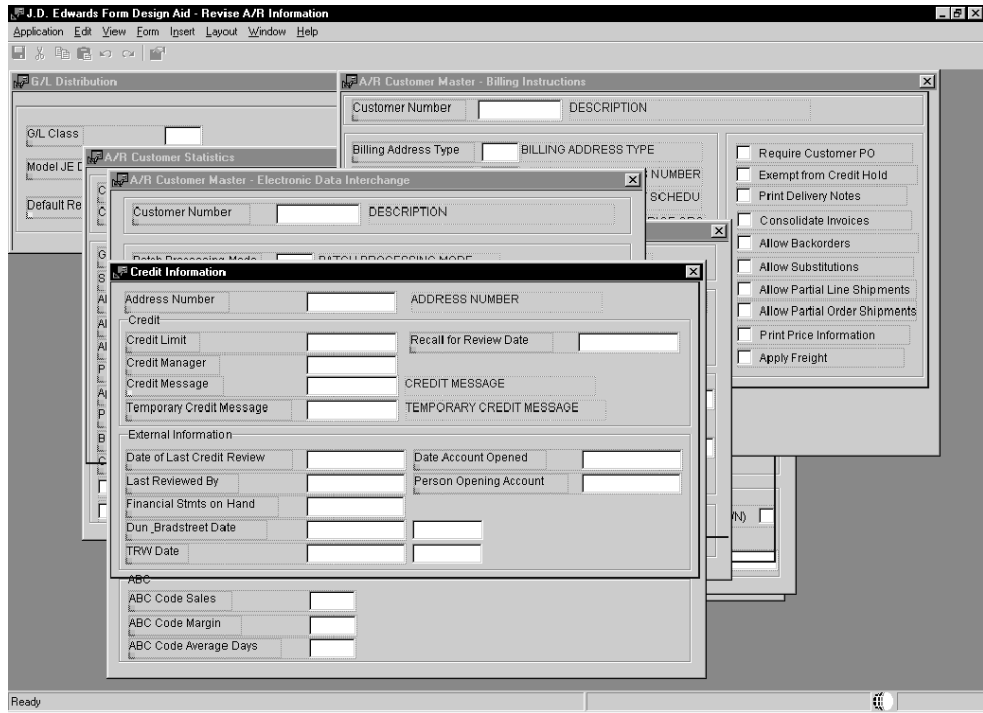
6. Open the event rules for the form, position the cursor where you want to add the Start Process, and click the System Function button.
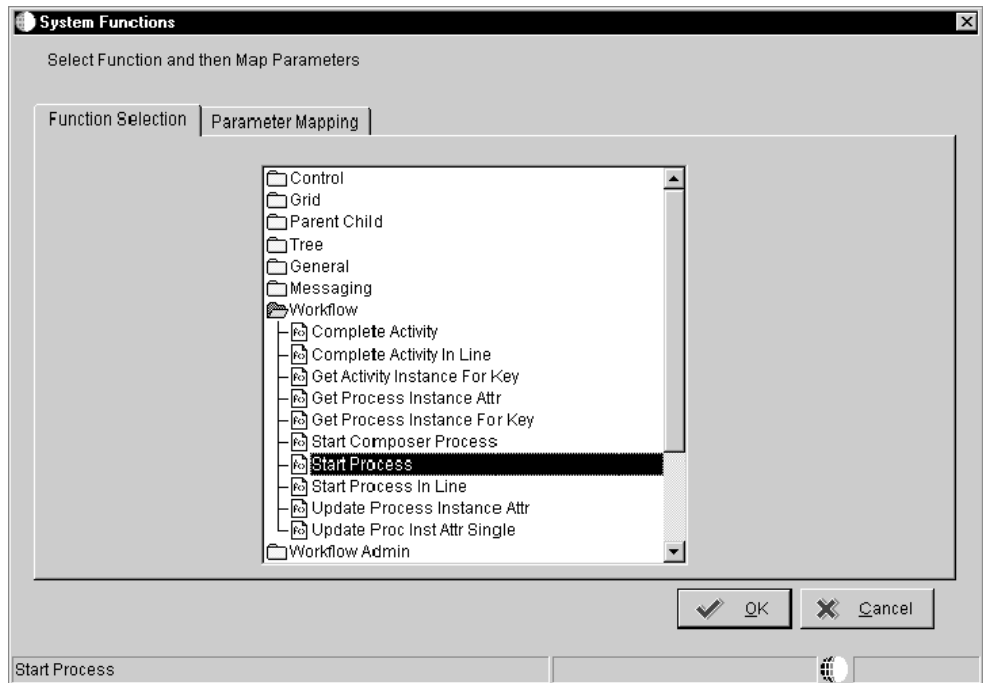
7. On System Functions, click the Function Selection tab, double-click the Workflow folder, and then choose Start Process.

8. Click the Parameter Mapping tab and double-click Choose Process.

9. On Process Search and Select, find the process that you want to attach to the application and click OK.

   The Workflow engine only runs an active process. If you have two versions for a process, such as with CREDLIMIT version 1 and CREDLIMIT version 2, it will run the active version, CREDLIMIT version 1.
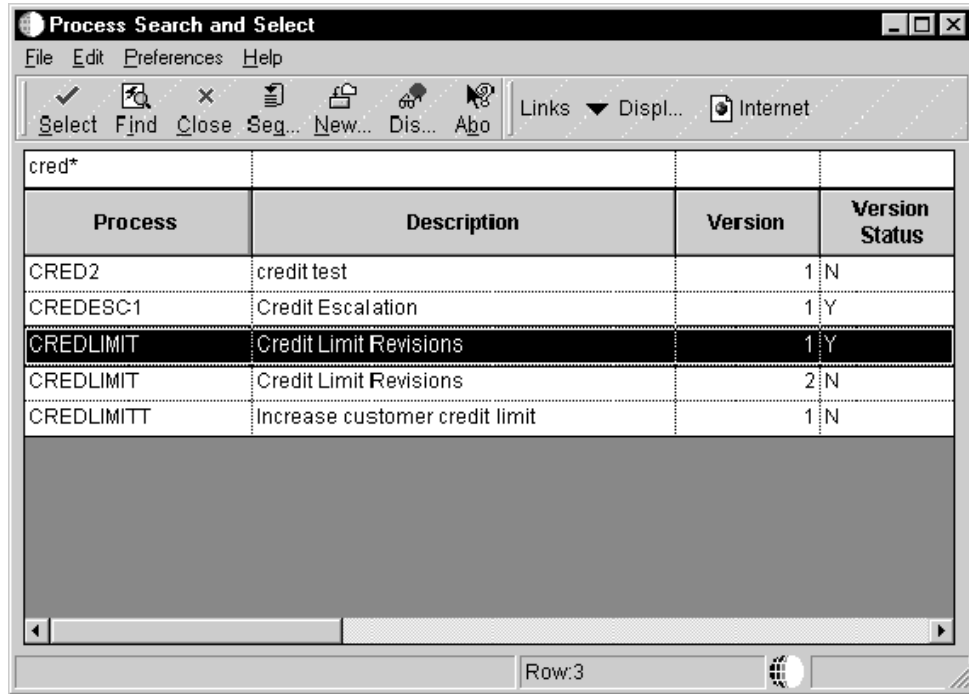
10. On System Functions, choose the Key DS data item, and double-click the Define Mapping object.

11. On Data Structure Mapping, map the Key DS to the corresponding object in the Available Objects list.

12. Map the Attributes DS and click OK.
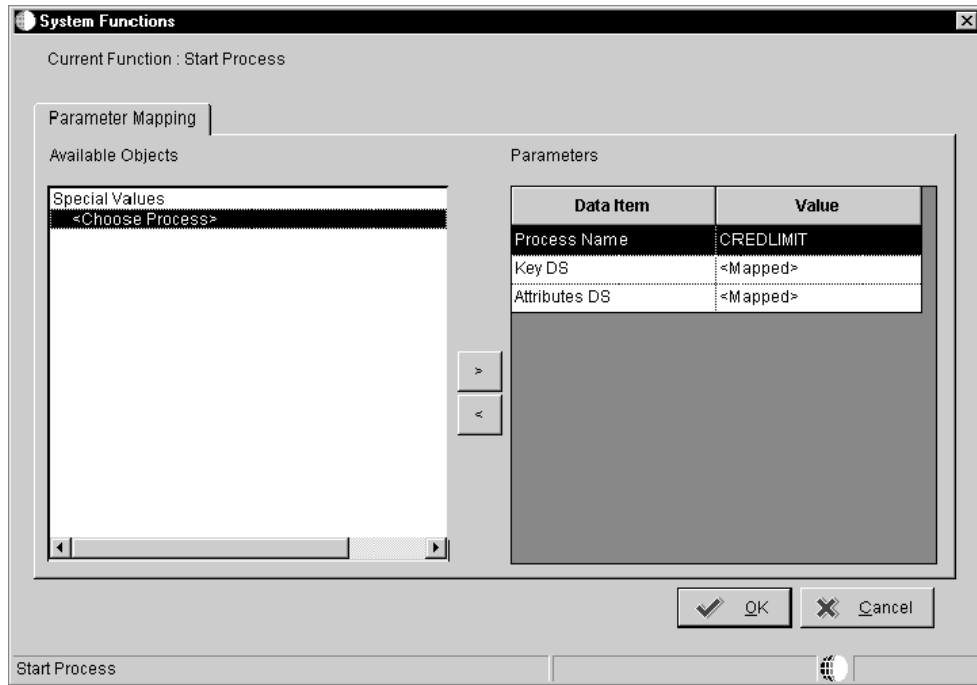
See Also

❑ *Workflow System Functions* for information on message system functions and workflow system functions

► To attach a form interconnection

You can attach a form interconnection event rule that calls a message form. For example, you might want the system to call a form that notifies a user that the requested changes are made, pending approval from others.

1. On Event Rules, click the Form Interconne

2. On Work With Applications, find and choose the application that you want to use.

3. On Work With Forms, choose the form that you want to use.

4. On Form Interconnections,

    In the Credit Limit Changed example, the form that is called when a user makes a change to a customer's credit limit is used for informational purposes only. Therefore, you do not need to pass any values to this form.

See Also

❑ *Event Rules Design* in the *Development Tools* documentation for information about attaching event rules to applications

❑ *Workflow System Functions* for information about message system functions and workflow system functions

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Using Visio to Setup Workflow Processes

You can use the Visio Professional graphical display tool to set up your Workflow processes. Visio Professional simplifies the setup process because Visio lets you drag activity icons and connectors onto a page, rather than choosing each application from the OneWorld menu. The system starts the appropriate application according to the icon that you drag to the page.

Before You Begin

❑ Install Visio Professional 5.0 on your workstation.

Setting Up Workflow Activities in Visio

After you set up a workflow process through Process Master (P98800), you can use Visio to graphically add activities and rules to the workflow process. Visio shows you how each activity is connected to the other, which helps you decide where an activity or activity condition should be placed in the process, or where a subprocess should exist.

Specifying Visio as the Design Interface

Before you can begin adding activities and rules in Visio, you must activate the processing option that invokes the Visio application.

► **To specify Visio as the design interface**

1. From Workflow Management Setup (G0241), right-click Process Master.
2. Choose Prompt for Values from the menu.
3. On Processing Options, choose the Graphics tab.
4. Enter 1 to invoke Visio as the primary design interface and click OK.

Attaching Activities to a Process in Visio

After you set up a process, you attach activities to it. You can attach the following activities to a process through Visio:

- Function
- Batch Application
- Executable
- Interactive Application
- Message
- Halt Process
- Process

Visio Professional contains several icons and connectors that you use to attach activities to the process. The palette on the left of the Visio desktop contains all the icons and connectors that you need to set up your process.
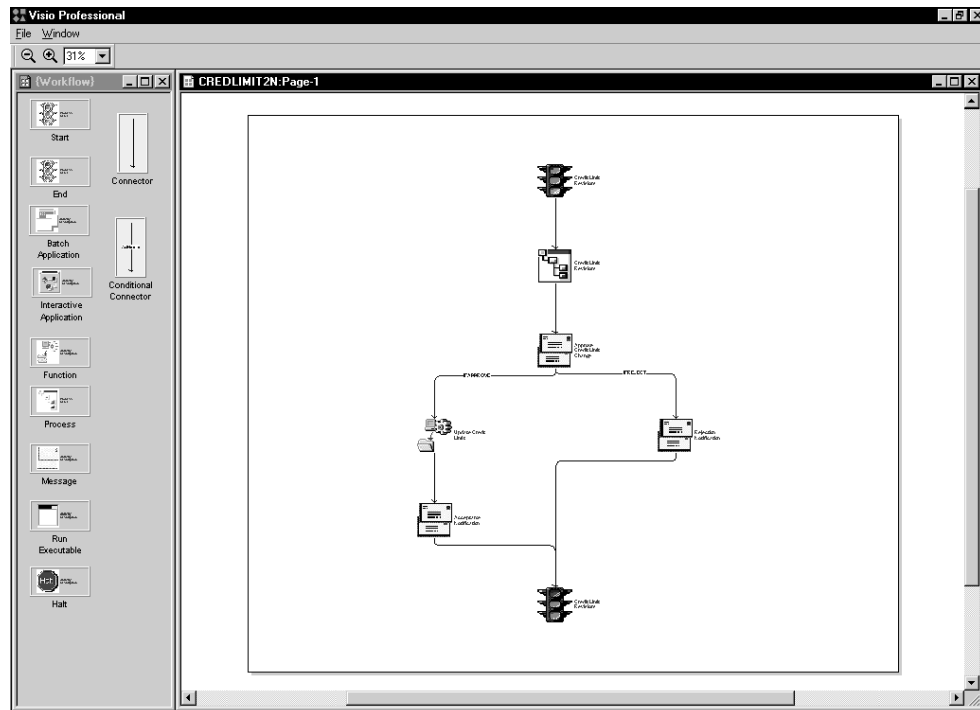
Following is an explanation of each icon and connector:

Plain connector   Attaches activities to the start and end points of a process.

Start   Identifies the beginning of the process.

End   Identifies the end of the process.

Batch application   Identifies this activity as one that launches a batch process or report.

Interactive application   Identifies this activity as one that launches an interactive application.

Business function   Identifies this activity as one that attaches a function for special logic processing. For example, the Update activity in the Credit Limit Changed example is a business function that updates the database with changes.

Process   Identifies this activity as a subprocess.

Message   Identifies this activity as one that sends a message to a user or users.

Connector with criterion   Attaches activity conditions to activities.

Run executable   Identifies this activity as one that launches an executable program, such as a word processing or spreadsheet application.

Halt Process   Identifies this activity as one that halts the process. The process will not automatically restart. You can run a batch process to restart any halted processes.

The Check for Expired Activities program (R98810) monitors processes that have been halted.

►   **To attach activities to a process in Visio**

1. From the palette, drag the icon that corresponds to the activity that you want to attach to the process. Drop the activity between the start and end icons of the process.

   When you drop the activity icon onto the desktop, the system invokes the Activity Revisions form.

2. On Activity Revisions, create your activity as described in *Adding Activities to a Process*.

Attaching Activity Conditions to Activities in Visio

You use the Connector with Criterion to attach activity conditions to activities. After you attach a connector to an activity, you can move the connector around, if necessary.

When you have finished creating the process and close and save the application, Visio deletes any connectors that are not attached to activities.

►   **To attach activity conditions to activities in Visio**

1. Drag the Connector with Criterion onto the desktop and attach it to each activity that will be associated with this condition.

   To add a new activity condition, click Add on Process Rule Search & Select and follow the steps as described in *Adding Activity Conditions*.
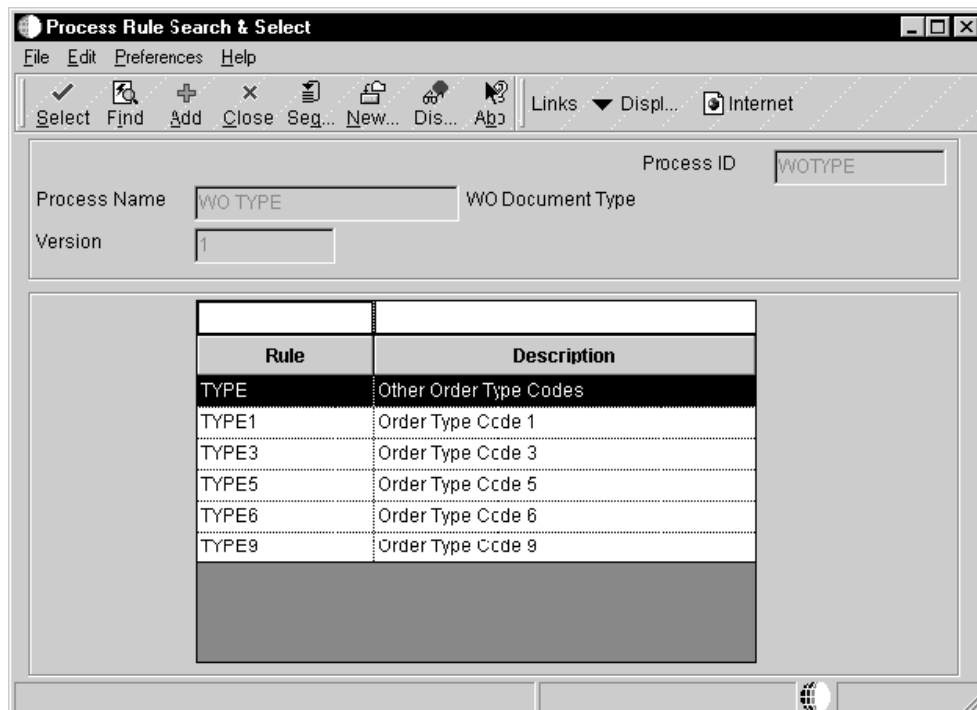
2. On Process Rule Search & Select, click Find to view all the activity conditions associated with this process.

3. Choose the condition that you want to attach to the activity and click Select.

The system returns to Visio. The connector associated with the activity condition appears on the desktop.

4. Drag one end of the connector to each activity. When you drag the connector, a small black box appears, which indicates the connection point of the connector. Attach the connection point to each activity.

Note

If the connector is attached properly, you see a small red box at the connection point between the connector and the activity. A small green x means that the connector is not attached properly.

You can also right-click the activity to which the connector is attached, choose View, and then choose Connection Points. Small gray x's appear at each of the connection points to which the connector is attached.

Attaching a Plain Connector to Activities in Visio

You use

▶ To attach a plain connector to activities in Visio

In Visio Professional, drag the plain connector to the desktop and attach it to an activity, and the start or end icon of the process.

Note

If the connector is attached properly, a small red box appears at the connection point between the connector and the start or end of the process. A green x means that the connector is not attached properly.

You can also right-click on the activity to which the connector is attached and choose View, Connection Points. Small gray x's appear at each of the connection points to which the connector is attached.

Viewing Activity Condition Text in Visio

You can view the activity condition text (or conditional rule text) so you know which conditions are attached to your activities.

▶ To view activity condition text in Visio

1. In Visio Professional, right-click anywhere on the desktop.
2. Choose Activity Conditions Text.
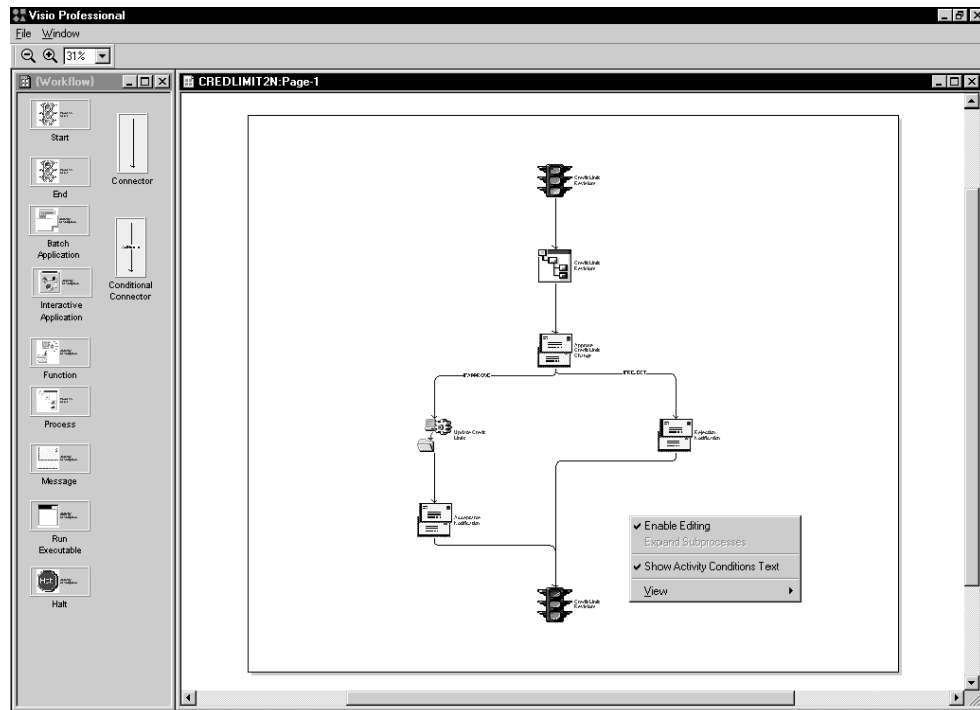
The system displays the activity condition text for each activity condition within the process.

Working with an Existing Workflow Process in Visio

You can use Visio to modify existing Workflow processes. For example, you can use Visio to add a new activity to a process or change an activity condition in a process. When you work with an existing process in Visio, you can see where each activity and activity condition occurs in a process.

You can also view all subprocesses within a process by expanding all of them or just one, which is helpful if you need to modify activities or conditions within a subprocess.

Note

If you edit a process outside of Visio, the file that saves the last known Visio drawing will be removed and re-drawn when Visio is opened the next time. This procedure might change the appearance of how the icons in Visio were arranged.

Before You Begin

❑ Make sure that you have activated the graphic display processing option before you open the process. Otherwise, the system does not invoke Visio.

Modifying a Process and its Activities in Visio

When you modify a process and its activities in Visio, you must enable editing, then make changes as necessary.

▶ **To modify a process and its activities in Visio**

1. From Workflow Management Setup (G0241), choose Process Master.

2. On Work With Processes, find and choose the process that you want to modify.

3. From the Row menu, choose Process Relationships.

   The system opens the process in Visio.

4. Right-click anywhere on the desktop and choose Enable Editing.

   After you enable editing, you can delete or add icons and connectors to the Workflow process.
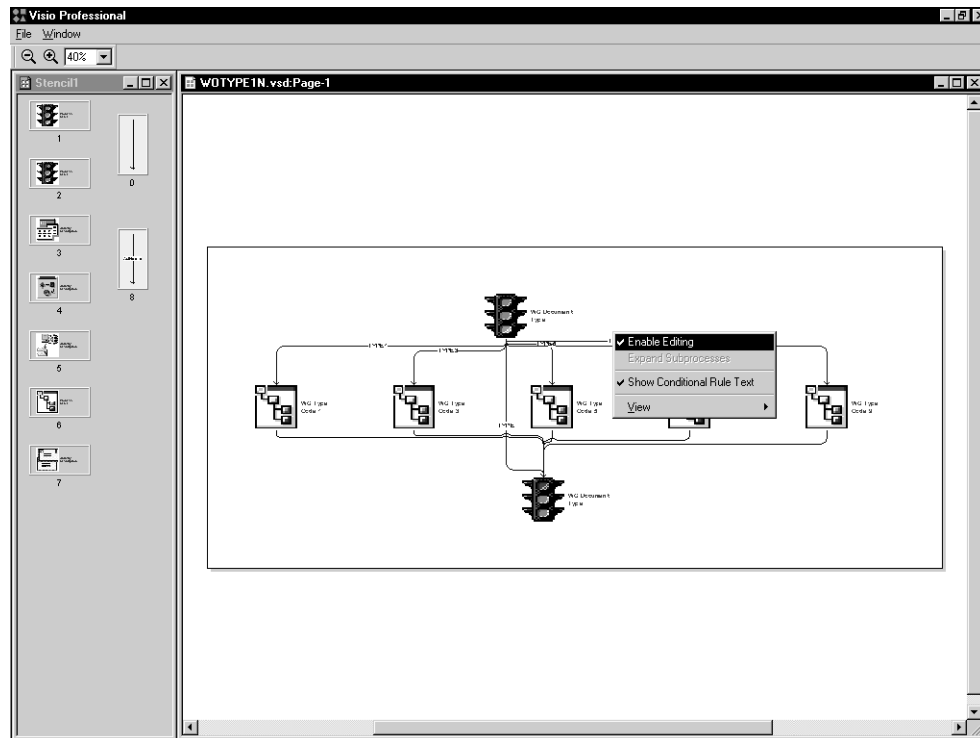
5. Modify the process and activities as necessary.

Viewing Subprocesses in Visio

Some processes contain numerous subprocesses, which you cannot see in Visio unless you expand the view. You can expand the view so that you can see subprocesses for all processes within Visio, or you can expand the view to see the subprocesses of just one process.

Note

You cannot expand the view of processes in Edit mode. You must turn off the Enable Editing option before expanding processes.

► **To expand the view of all subprocesses in Visio**

1. In Visio Professional, right-click anywhere on the desktop.
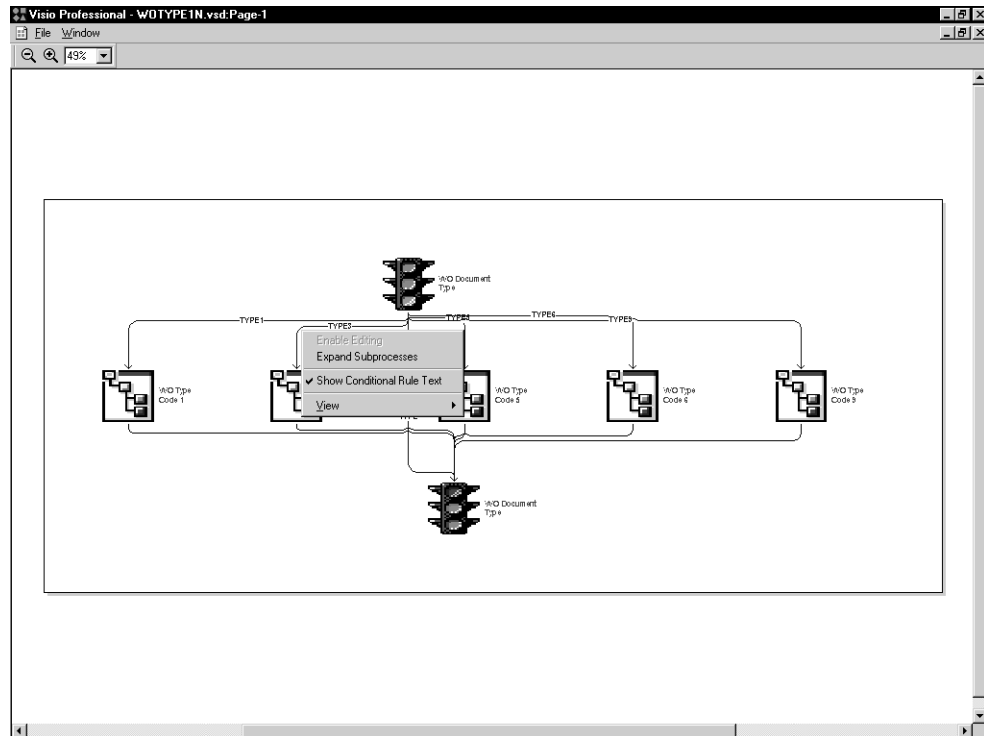
2. Choose Expand Subprocesses.
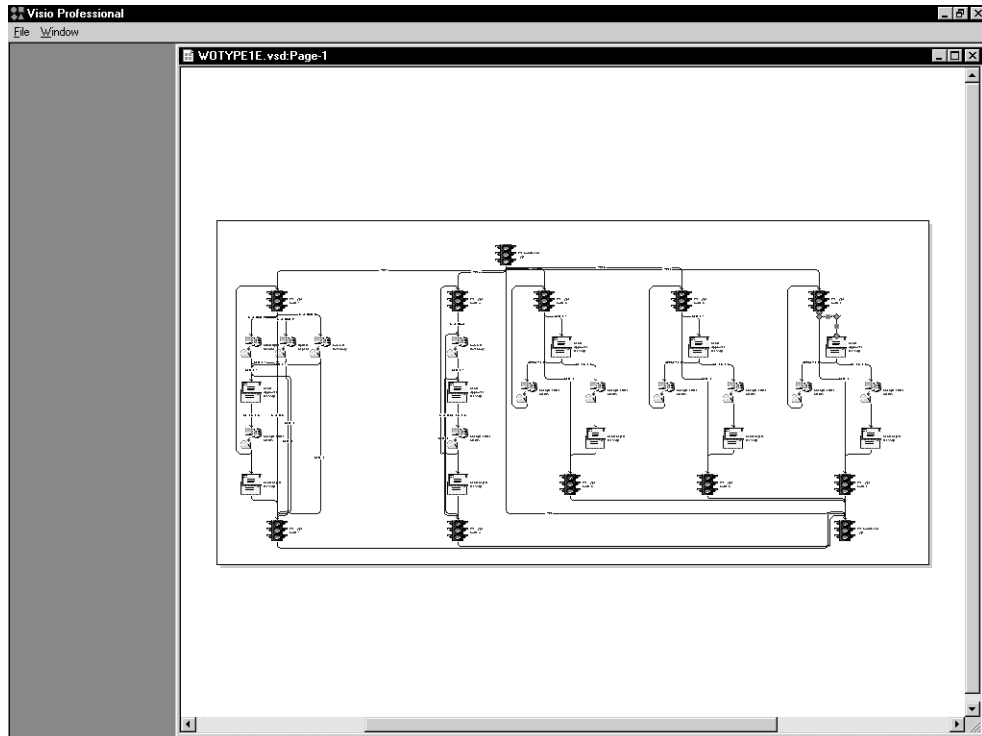
The system displays all subprocesses within the processes.

3. After you expand the subprocesses, you can right-click and choose Compress Subprocesses to return to the original view.

► **To expand the view of one process in Visio**

1. In Visio Professional, right-click on a process icon.
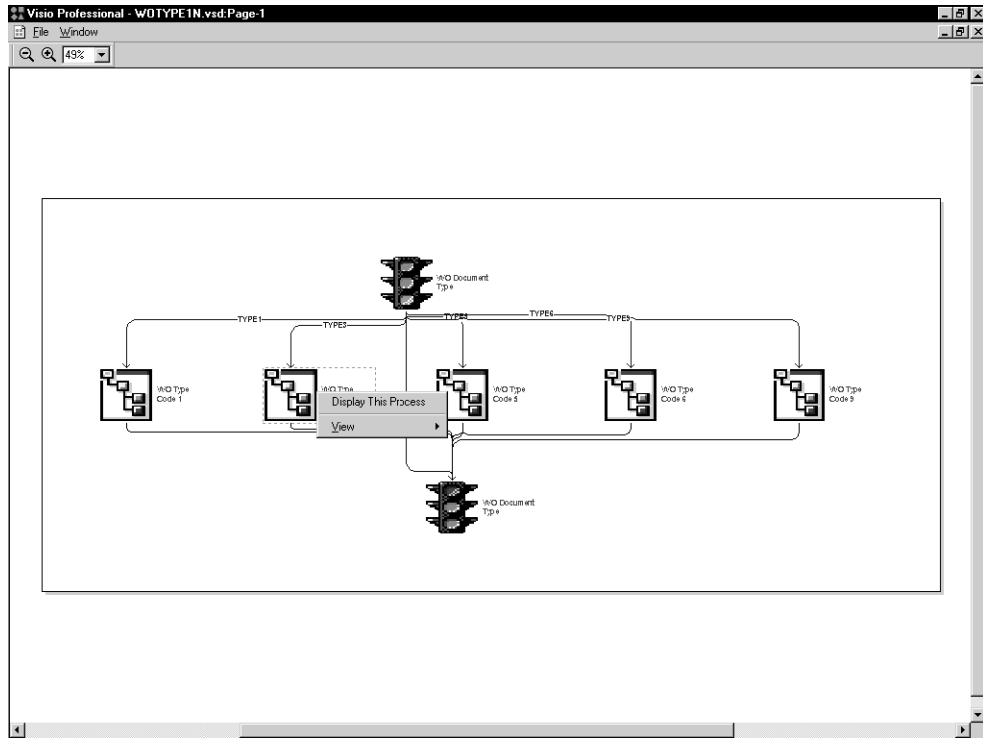
2. Choose Display This Process.
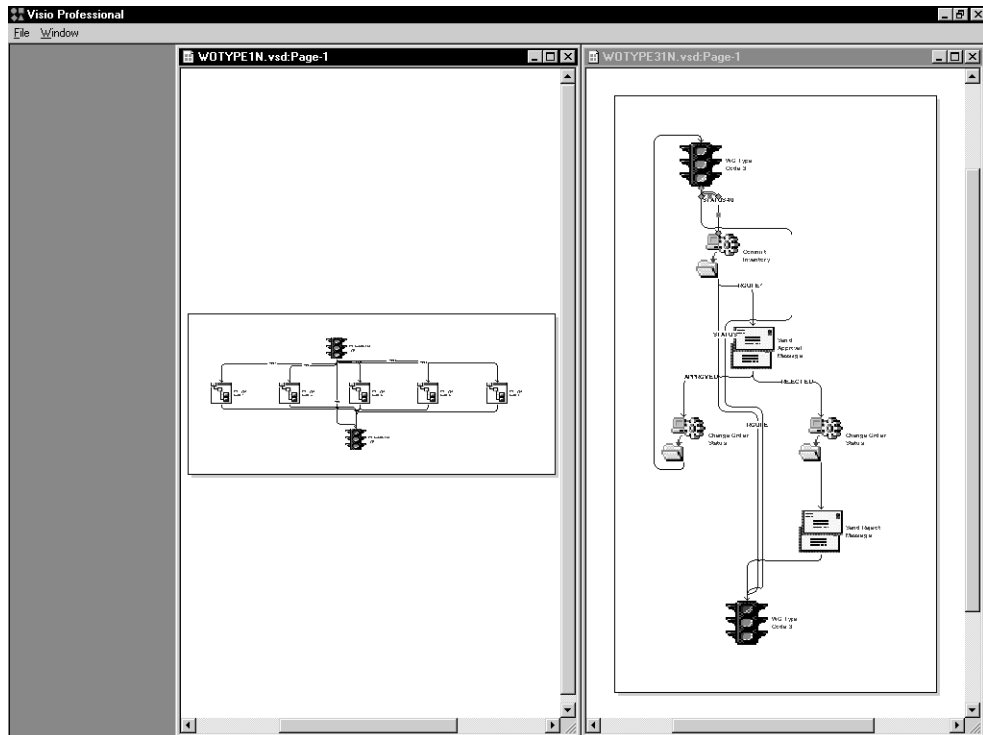
The system displays the subprocesses within the process that you chose.

Using Editing Tools in Visio

You can use various editing tools within Visio to make your work easier. For example, you can zoom in on a particular part of a process, view the ruler and guides to arrange the process evenly on the desktop, or move connectors.

Using the Magnification Option

You can increase or decrease magnification of the desktop so that you can view a few details of the process or view all details of the process.

▶ **To use the magnification option in Visio**

1. In Visio Professional, right-click anywhere on the desktop.
2. Choose View, and then one of the magnification options.

Viewing the Ruler, the Grid, and the Guides

You can turn on the ruler, the grid, or the guides. The ruler shows measurement at the scale of the drawing. The grid and guides help you align icons and connectors on the desktop.

▶ **To view the ruler, grid, and guides in Visio**

In Visio Professional, right-click anywhere on the desktop and choose one or more of the following:

- Ruler
- Grid
- Guides
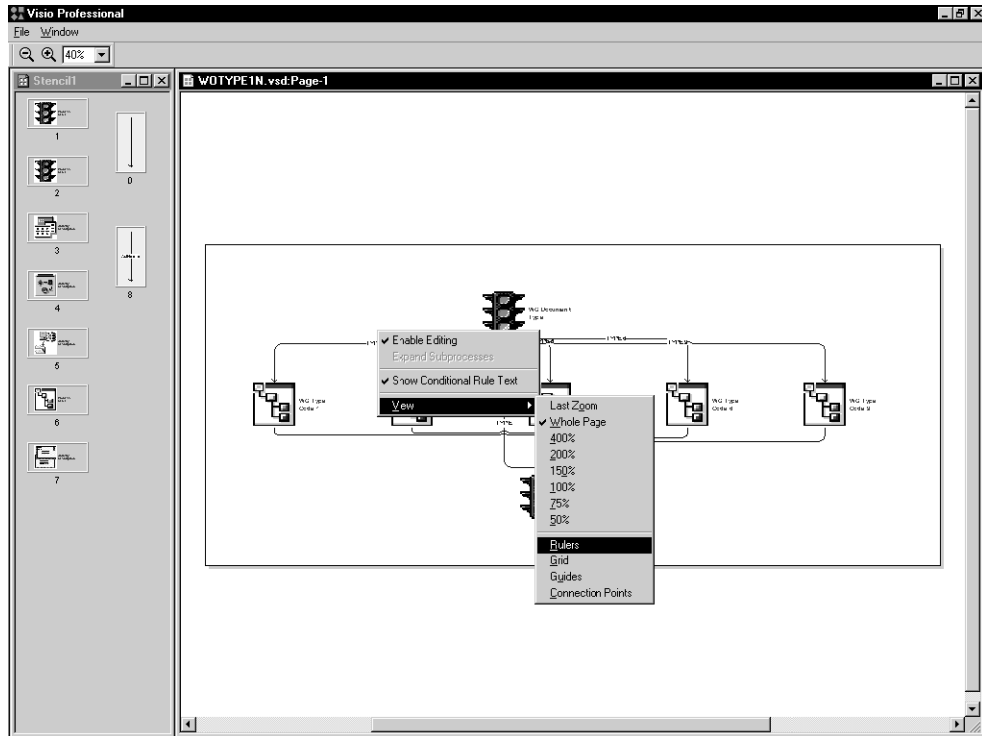
Printing Activity Condition Text

You can print a copy of a Workflow process from Visio if necessary. However, if you want the text for activity conditions to appear when you print the process, complete the following task. Otherwise, any activity condition text within your process will not appear on the printout.

▶ **To print activity condition text from Visio**

1. In Visio Professional, choose Print from the File menu.
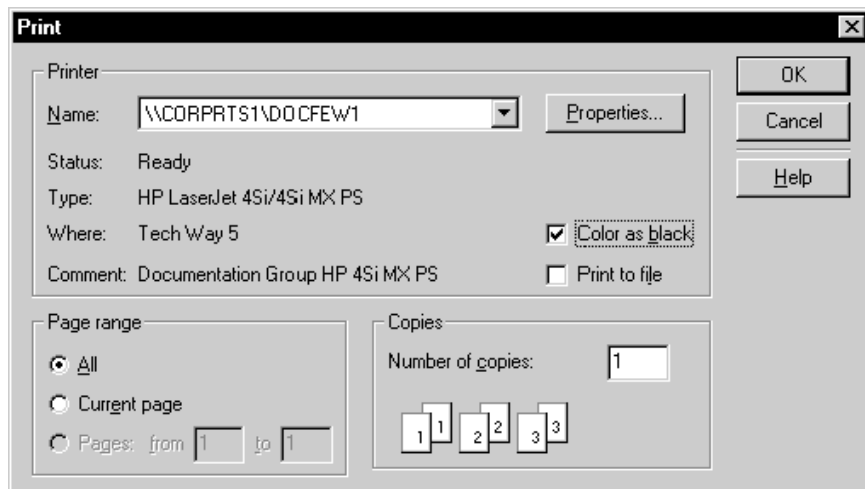
2. On the Print dialog box, choose the Color as black option, specify any other printing options, and click OK.

Moving Connectors

You might want to move connectors around on the desktop if, for example, one connector overlaps another and you want to see the connector text for each connector.

▶ **To move a connector in Visio**

1. In Visio Professional, click the connector you want to move. Small green boxes appear along the length of the connector.
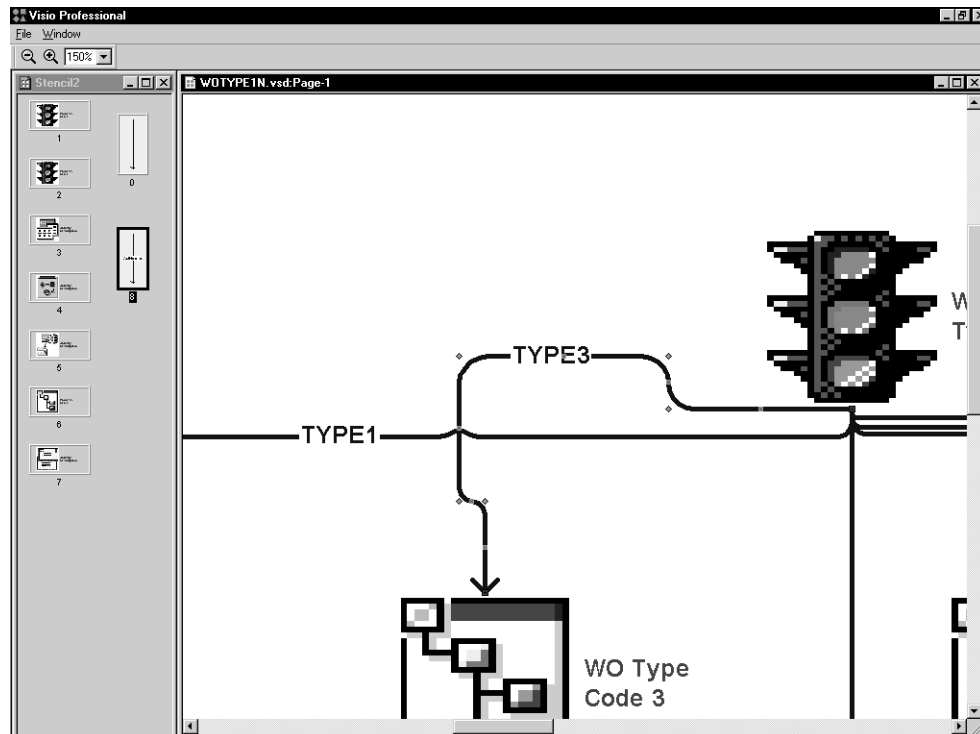
2. Drag any of the green boxes to the position you want.

See Also

❑ Visio Professional online help for more information about how to use Visio Professional

Administrative Tasks

Workflow allows you to complete administrative tasks such as monitoring an individual employee's queues or all the queues for each group within your organization. You can also analyze processes for improvement analysis, activate the escalation monitor, and copy process data to another data source.

You can monitor Accounts Receivable queues and Purchasing queues using the Workflow Advanced & Technical Operations menu (G0241). If necessary, you can add menu items that access other queues. For example, you can add a menu item to Advanced & Technical Operations that invokes Shop Floor Control queues.

See *Working with Menus* in the *Foundation* documentation for more information about adding applications to menus.

Monitoring Process Activity

You use the Process Activity Monitor to monitor the process flow in the Workflow system and to retrieve audit data for process improvement analysis. You can also terminate, suspend, resume or override instances of a process. The Process Activity Monitor lists all of the activities that apply to the process and the status of each activity– for example whether the activity is complete or active. You can also review the resource (or employee) that was assigned to that activity, the start and end time of each activity, and the time and date that an activity expired.

Furthermore, you can review what was attached to messages when acted upon. You can also override the message approval process for messages that have not been answered by a lower level recipient. See *Understanding Distribution Lists* and *Setting Up Distribution Lists* for information about Higher Level Overrides.

The Process Activity Monitor also shows back-to-back processes (processes containing the same process keys). These back-to-back processes can become queued up until the first one is completed. For example, several credit limit change requests can be waiting to be accepted or rejected for the same primary key. These requests show a status of "Awaiting" until the first one is accepted or rejected.

Reviewing a Process Status

You review a process status to see if activities have been acted upon and to retrieve audit data.

► To review a process status

1. From Workflow Advanced & Technical Operations (G0231), choose Process Activity Monitor.
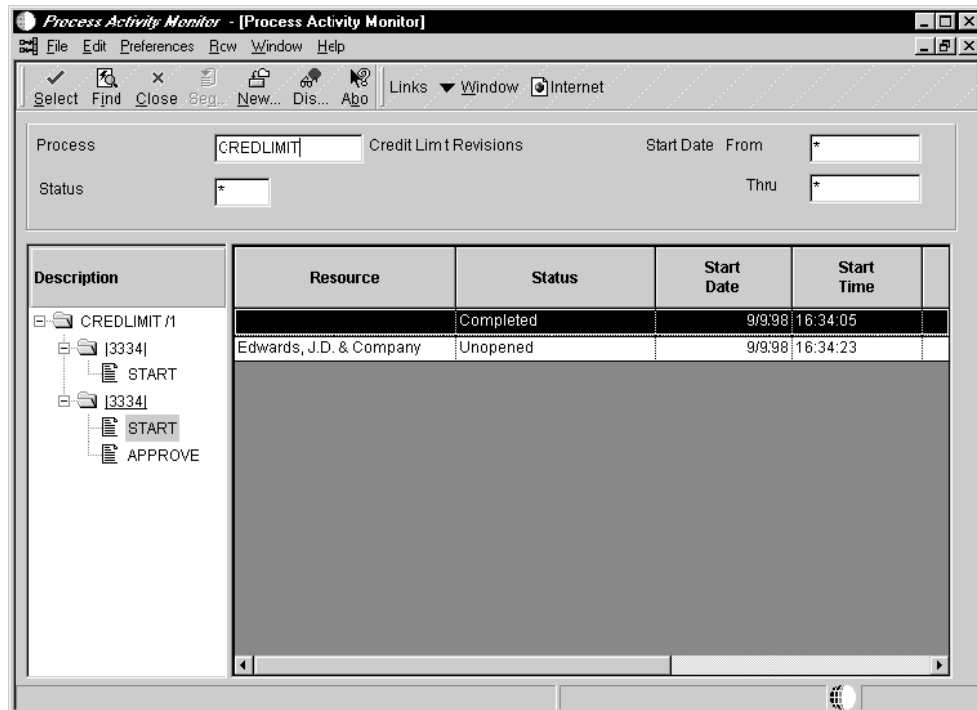
2. On Process Activity Monitor, complete the following field:

- Process

  Enter the name of the process for which you want to view activity.

3. Complete the following optional fields:

- Status

- Start Date   From

- Thru

4. Click Find to display the status of the process.

Terminating, Suspending, or Resuming an Instance of a Process

You might want to terminate an instance of a process if it contains errors or if the process cannot continue, such as when an employee has not yet answered his or her messages because he or she is on vacation or no longer works at the company. In this case, subsequent requests for the same process queue up behind the original request.

You might want to suspend an instance of a process if you want other processes to finish before a certain process. You can also restart a suspended instance of a process.

► **To terminate, suspend, or resume an instance of a process**

1. From Workflow Advanced & Technical Operations (G0231), choose Process Activity Monitor.

2. On Process Activity Monitor

3. Choose one of the following from the Row menu:

   - Terminate

   - Suspend

   - Resume

Reviewing Attachments to an Activity

You can review attachments associated with an activity. For example, if a recipient approves a message, then adds additional text to that message, and sends it, you can view that message text through an attachment from the Process Activity Monitor.

► **To review attachments to an activity**

1. From Workflow Advanced & Technical Operations (G0231), choose Process Activity Monitor.

2. Find the process with which you want to work.

3. Choose the row for which you want to view attachments.

4. From the Row menu, choose Attachments.

   If an activity does not contain attachments, the Attachments option on the row menu is not enabled.

Overriding the Message Approval Process

You might want to override the message approval process if a message has not been answered by a recipient in a lower level. For example, if a clerk has not approved or rejected a message and the manager wants the message to be approved to move it to the next level, the manager can override the approval process in the Process Activity Monitor and approve or reject the message himself. The manager can only override the message approval process for any messages sent to a distribution list that includes higher level overrides.

The Overrides option is enabled if all of the following conditions are met:

- You exist in the address book.

- You are a member of a higher level group than the recipient for whom the message was intended.

- The message is unopened.

- The message has an active shortcut.

See *Understanding Distribution Lists* and *Setting Up Distribution Lists* for more information about Higher Level Overrides.

1. From Workflow Advanced & Technical Operations (G0231), choose Process Activity Monitor.

2. On Process Activity Monitor

3. Choose the row for which you want to override message approval.

4. Choose Override from the Row menu.

   The system displays the Higher Level Override form.

5. Accept or reject the message.

   The system returns to Process Activity Monitor.

6. Click OK.

Changing Queue Security

You can change the security status for a user or group of users within a message queue. You can either give a user authority to monitor queues within a group or give public security to queues for all groups.

You can add security by user, by distribution list, or both. For example, you might want to set up security for a manager so that he or she can monitor all messages within a group for certain queues. Or you might set up security by distribution list only so that users within a distribution list have authority to monitor messages within a group for certain queues. If you want to give only a few people within a distribution list access to certain queues, you enter the user's address book number and the distribution list to define which queues that user in a particular distribution list can access.

Note

Using Queue manager to view mail ignores security and all messages can be viewed.

Specifying the Queues that a User Can View in a Group

When you set up a new user in a distribution list, you must specify which queues that the user can view within that group.

▶ **To specify the queues that a user can view in a group**

1. From Workflow Management Setup (G0241), choose Queue Security.

2. On Work With Workflow Message Security, click Add.
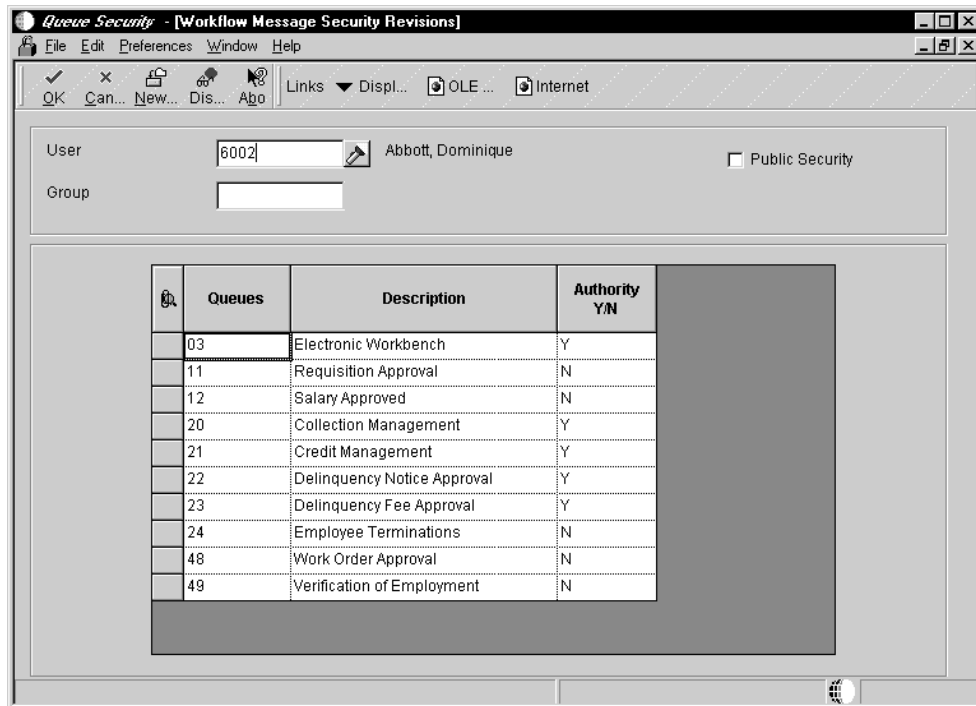
In this illustration, Dominique Abbot has access to the Electronic Workbench,
Collection Management, Credit Management, Delinquency Notice Approval, and
Delinquency Fee Approval queues for group X. Therefore, she can monitor all
messages within these queues for group X.

3. On Workflow Message Security Revisions, complete the following fields:

   • User

   • Group

4. Specify the queues that a user can view by completing the following field and clicking
   OK:

   • Authority Y/N

Changing Public Security

When you assign the Public Security option, all users have access to queues that you
specify. For example, if you choose the Public Security option and give authority to the
Collection Management queue, all users in the system are able to view all messages in that
queue.

► **To change public security**

1. From Workflow Management Setup (G0241), choose Queue Security.

2. On Workflow Message Security Revisions, complete the following fields and click OK:

- Public Security

  When you choose this option, the system protects the User and Group fields because you are specifying that you want to give authority to specific queues to all users in the system.

- Authority Y/N

Note

If you complete the user field, the system protects the Public Security field.

See Also

❑ *User Defined Codes* in the *Foundation* documentation

Activating the Escalation Monitor

The escalation monitor, or Check for Expired Activities program (R98810), checks for any Message activity instances that have escalation associated with them. When the monitor finds Message activities with escalation, it forwards those messages that have not been acted upon after a specified period of time to the next user. It also resumes Halt activities.

This chapter describes how to start the escalation monitor manually by submitting its batch version, as you do with any other batch process. However, the Scheduler application provides a convenient alternative for automatically restarting the escalation monitor at predefined intervals.

See *Scheduling a Job* in the *System Administration* documentation for more information.

Caution

If the Scheduler is not used, you should restart the escalation monitor each time that it stops, with an acceptable duration in between depending on the urgency of Halts and Escalations. The Escalation Monitor does not automatically restart. If you do not restart the monitor, the processes that contain messages with escalation will not be reactivated. Instead, they will remain in a suspended state until you restart the monitor. Therefore, it is beneficial to use the Scheduler application to automatically restart the escalation monitor for you.

► **To activate the escalation monitor**

1. From Workflow Management Setup (G0241), choose Workflow Advanced & Technical Operations (G0231), and then Start Escalation Monitor.

2. On Work With Batch Versions, choose version XJDE0002.

3. On Version Prompting, choose any of the following, if necessary, and click the Submit button:

   - Data Selection

   - Data Sequencing

When you run the monitor, the system produces a summary of Message and Halt Process activities that have not been completed yet.

See Also

❑ *Adding a Message Activity* for information about monitoring for escalation in message activities

❑ *Scheduling Jobs* in the *System Administration* documentation for information about automatically restarting the escalation monitor (Check for Expired Activities program - R98810)

Analyzing Workflow Processes

You analyze Workflow processes using the Advanced Analysis application. Through Advanced Analysis, you can see how long it takes for a process to run and where processes might be queued up. This analysis can help you make your processes more efficient and less time consuming. You can view an analysis using actual or average duration in days or hours, depending on your needs.

You can export the da

You can use several combinations of process, activity, version, and instance to analyze process data. Following are some possible combinations:

Process, version, instance, actuals	The actual duration for each instance of the process and version from the Process Instance table (F98860).
Process, version, instance, activity, actuals	The actual duration for each activity within each instance from the Activity Instance table (F98865).
Process	The average duration for all versions of a process.
Process, version, averages	The average duration of the instances for that version. The instances are averaged together, regardless of the instance keys.
Process, version, instance, averages	The average duration for instances, if instances with the same key exist.
Process, version, instance, activity, averages	The average duration for each activity within the instance, if instances with the same key exist.
Process, instance, activity, averages	The average of activities for like instance keys across versions.
Process, version, activity, averages	The average duration for each activity across instances. The activities are averaged together, regardless of whether the instances to which they belong have the same key.
Process, activity, averages	The average of activity duration across versions.
Process by user	The average duration for all versions of the process for which that the user is responsible.
Process, version, by user	The average duration of the instances for that version for which the user is responsible. The instances are averaged together, regardless of the instance keys.

Process, version, instance, by user	The average duration for instances with the same key for each responsible user.
Process, version, instance, activity, by user	The average duration of each activity within instances that contain the same key for each responsible user.
Process, instance, activity, by user	The average of activities for like instances keys across versions for each responsible user.
Process, version, activity, by user	The average duration for each activity across instances for which the user was responsible. The activities are averaged together, regardless of whether the instances to which they belong have the same key.
Process, activity, by user	The average of activity duration for each responsible user.

► **To analyze a process**

From Workflow Advanced & Technical Operations (G0231), choose Advanced Analysis.

If you choose Actuals, the system automatically includes the process, version, and instance in the analysis. You can choose whether to include activity in the analysis.

If you choose Average, the system automatically includes the process in the analysis, and you can then choose whether to view averages based on version, instance, or activity.

If you choose the User option, a resource column appears in the detail area. The User column identifies the user who was assigned to that particular activity.
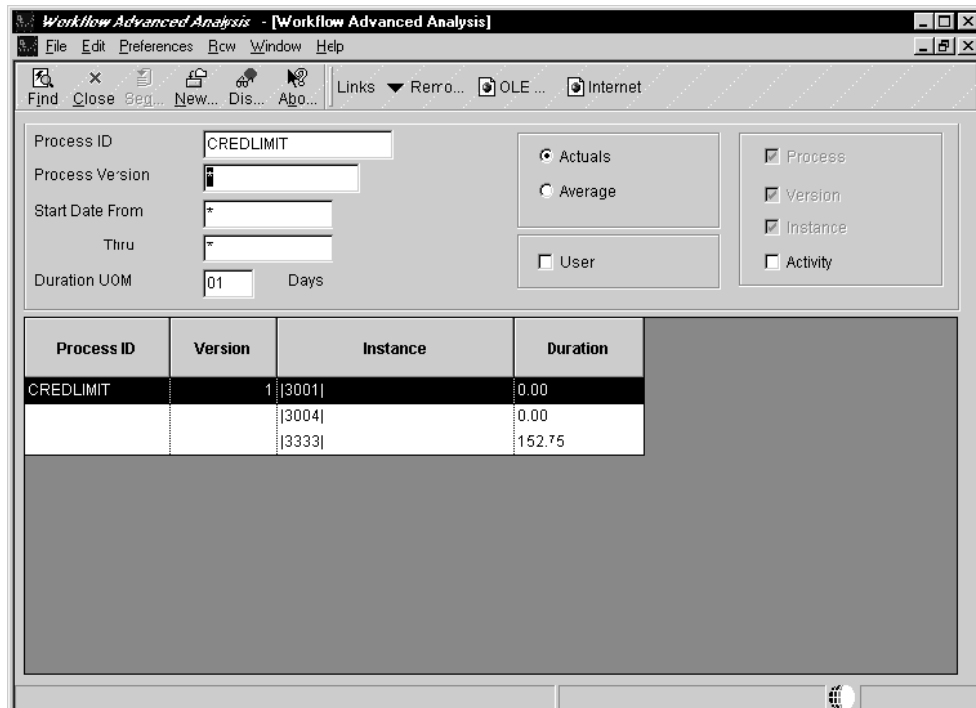
1. On Workflow Advanced Analysis, click Find to query all processes, or complete the following field and click Find to query a process:

   - Process ID

2. Complete the following optional fields:

   - Version

   - Start Date From

   -           Thru

   - Duration UOM

     To analyze a process by day or by hour, enter the appropriate unit of measure in this field. You can use the visual assist to make your choice.

3. Click one of the following options:

   - Actuals

   - Average

4. If you want to analyze the actuals for a process and you want to include activities in the analysis, click the following option:

   - Activity

5. If you want to analyze the averages for a process, click one or more of the following options:

   - Version

   - Instance

   - Activity

6. If you want to view the user responsible for a process, click the following option:

   - User

7. Click Find.

   The system displays audit information based on your choices. You can manipulate the information in the grid (for example, you can graph, export, and print) like any other grid information.

8. If you want to remove a row of data (for example, if you want to create a graph of the data contained in the analysis but do not want to include certain rows of data), choose Remove Row from the Row menu.

   The system removes the row from the grid but does not delete the information from the database.

Printing Process Instance Reports

You can print process instance reports to review information about the Workflow process activity on paper rather than online or to archive process activity information on paper for future reference.

▶ To print process instance reports

1. From the Workflow Advanced & Technical Operations menu (G0231), choose Process Activity Print.

2. Choose a version in the detail area and click Select.

3. On Version Prompting, choose any of the following, if necessary, and click the Submit button:

   - Data Selection

   - Data Sequencing

4. On Report Output Destination, choose one of the following and click OK:

   - On Screen

   - To Printer

See Also

❑ *Submitting and Printing Reports* in the *Enterprise Report Writing* documentation for more information about how to submit reports

Purging Workflow Data Files

In order for Workflow to run, it must create Process Instance (F98860) and Activity Instance (F98865) records. If you choose to have your Workflow process retain these records for historical purposes, the files will become very large and occupy storage resources. The presence of large amounts of data in the F98860 and F98865 tables will also hinder performance of the Workflow engine.

You should purge Workflow data files periodically to minimize the amount of data in the tables and recover disk space. You can purge completed tasks or completed processes. Purging completed tasks deletes message activities, whereas purging completed processes deletes instances.

Caution

Purging data files might affect your metrics analysis. Because of this, J.D. Edwards recommends that you restrict access to this application.

▶ To purge completed Workflow processes

It is recommended that you purge completed processes regularly to minimize the amount of data in the tables. This process only purges records that don't affect active processes in the system and purges F98860 and F98865 records that possess a status of complete, terminated, or error.

1. From Workflow Advanced & Technical Operations (G0231), choose Data File Purges and then Purge Completed Processes.

2. On Work With Batch Versions, choose a version from the detail area and click Select.

3. On Version Prompting, click Data Selection and then click Submit. It is recommended that data selection be used when running Purge Completed Processes to further restrict the records that are being deleted.

4. On Printer Selection, choose your print destination and click OK.

► **To purge completed Workflow tasks**

Workflow tasks contain send message activities. Send message activities produce files that are used to record mail messages. Files containing these message activities can grow very large. Active Workflow messages which contain shortcuts to resume the Workflow process completely delete themselves from the database after they are executed, but Workflow messages that are not active do not. Non-active messages can be deleted manually from the Work Center queues, but they will not be removed from the database until they are removed from the deleted queue.

1. From Workflow Advanced & Technical Operations (G0231), choose Data File Purges, then choose Purge Completed Tasks.

2. On Work With Batch Versions, choose a version from the detail area and click Select.

3. On Version Prompting, click Data Selection or Data Sequencing and click OK.

4. On Printer Selection, choose your print destination and click OK.

Managing Workflow Processes

You must be careful when promoting Workflow processes through the development cycle. Workflow processes follow a similar path as other OneWorld objects, but a full understanding of workflow components makes it easier for you to manage and deploy workflows to the end user.

A Workflow process consists of two basic components: Workflow data and object specifications. To move workflows between your Development and Testing environments requires that you copy workflow data and related object specifications.

Workflow Data

Workflow tables reside in the Control Tables Data Source and contain Workflow process definitions, related activities, organizational structure, and other related tables as shown below:

F98800	Process Master
F98800D	Process Master Alternate Description
F98800T	Process Master Supplemental Information
F98810	Activity Master
F98810D	Activity Master Alternate Description
F98811	Activity Specifications

F98830	Process Activity Associations
F98840	Organizational Structure Master
F98845	Organizational Structure Rule

Object Specifications

Object specifications reside in a data source for the path code, such as Central Objects-DEVB733, and include the key data structure, the additional data structure, and related programs.

Workflow Deployment Processes

To deploy a workflow process, you must:

- Copy the process data to the desired location
- Transfer the objects used in the workflow
- Update your packages or build a full or partial package
- Deploy the workflow to testers or end users

Copying process data to another source is covered in this section. See *Object Transfer*, *Package Build*, and *Deployment*, in the *OneWorld Configuration Planning and Setup: Package Management* guide.

The following graphic illustrates the steps that are required to deploy a workflow process:

Data Stored in Workflow tables

Run Workflow Data Transfer
(PH9001) to move data

S F98800
S F98800D
S F98800T
S F98810
S F98810D
S F98811
S F98830
S F98840
S F98845

Update Control Tables

Object Specifications

Run Object Transfer Program
(P98604)

S Key data structure
S Additional data structure
S Related programs

Updated Object
Specifications

Build Package

Deploy the Workflow
Process
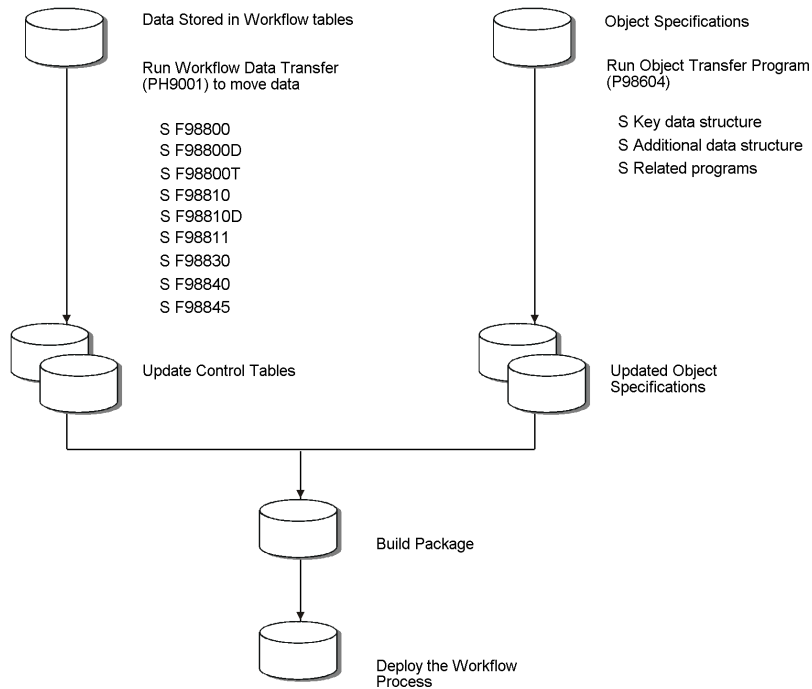
Copying Process Data to Another Source

You may need to copy Workflow process data from one data source to another, if, for example, you created a Workflow process on a development server and, once complete and tested, you want to copy it to the production server. You can copy all processes or selected processes from one data source to another without losing data in the destination data source. If a process already exists in the destination source, the system replaces the existing definition with the new one. If the process definition does not exist, the system adds it.

Workflow data changes between releases. Not only does J.D. Edwards add and modify its own data, but users may have their own workflow data as well as modified J.D. Edwards data. Effective with B73.3.1 installations and upgrades, J.D. Edwards delivers and merges all J.D. Edwards workflow processes with user workflow processes.

Note

You cannot copy data into B73.3 or later from an earlier OneWorld release.

If necessary, you must ensure that you have ODBC drivers set up correctly to access the data. If your ODBC drivers are not set up correctly, the system does not copy the process data. Also, you must have authority to access the destination data source. If you do not have authority to a data source and you run a data merge, the data does not appear in the destination data source.

See the appropriate Microsoft documentation for information about ODBC drivers.

Beginning with OneWorld Xe, use the Object Management Workbench (OMW) to handle workflow data transfer instead of the Workflow Data Transfer program (PH9001). In the OMW, workflow data transfer is accomplished with object transfer activity rules. Consequently, you must add workflow processes that need to be copied from one data source to another to an OMW project.

Object transfer activity rules are usually set up by your system administrator. The rules dictated the source and target locations for transferring objects, and in the case of workflow processes, these values correspond to data source names. The rules are executed when a project is advanced from one status to another. The same transfer rules apply regardless of the sign-on environment.

Note

On AS400/DB2, the system uses a separate data source for F98811. For details on setting up transfer activity rules for F9811, see *Object Management Workbench Configuration* in the *System Administration* documentation.

See Also

❑ The *System Administration* documentation for information about jde.log files and configuring the OMW

❑ The *Development Tools* documentation for information about Universal Table Browser and using the OMW

Workflow Processing

Prior to B73.3.3, all workflow processes ran synchronously, or one after the other. Starting with B73.3.3., workflow-enabled applications can use asynchronous processing.

Asynchronous processing allows various workflow processes to run at the same time. By starting a workflow process asynchronously, you are simply running the workflow in the background of the calling application. Although asynchronous workflow processes may process faster, synchronous processing is sometimes preferred. If a calling application depends on information from the workflow process, you should run the workflow process synchronously to ensure that the calling application gets the information it needs from the workflow process before the workflow finishes and the application closes.

A workflow process runs asynchronously by default, with the following exceptions:

- When it contains a form interconnect or run executable activity
- When it is run from a batch application
- When the workflow process is specifically designed to run synchronously

The workflow runs either on the client or the server as determined by the default Object Configuration Manager mapping for business functions.

When the workflow runs on the client, it is started on another thread maintained by the runtime module. When the workflow runs on the server, it is started in a dedicated kernel type that must be created on the server. The new kernel definition must be added to the jde.ini on the server. The system administrator typically defines this setting in the jde.ini file.

The following illustration is a high-level flowchart of asynchronous processing:

```
                                        Does WF have any FI                           Run WF locally and
  Application or NER                     or Run Exe Activities?                          synchronously
   calls Start Process

                                                                      Yes
      ┌──────────┐                         ◇────────◇──────────────────────────▶  ┌──────────┐
      │          │───────────────────────▶ ◇        ◇                             │          │
      │          │                          ◇      ◇                              │          │
      └──────────┘                           ◇    ◇                               └──────────┘
                                               ◇  ◇
                                                │
                                                │ No
                                                ▼
                                          ┌──────────┐        Fetch default BSFN
                                          │          │        OCM mapping
                                          │          │
                                          └──────────┘
                                                │
   Send WF to the                               │                                 Run WF locally and
   enterprise server                            ▼                                   asynchronously

      ┌──────────┐          Yes           ◇────────◇              No            ┌──────────┐
      │          │◀───────────────────────◇        ◇──────────────────────────▶│          │
      │          │                         ◇      ◇                             │          │
      └──────────┘                          ◇    ◇                              └──────────┘
           │                            Is default BSFN OCM                           │
           │                            pointing to server?                          │
           │                                                                         │
           │                              ┌──────────┐                               │
           └─────────────────────────────▶│          │◀──────────────────────────────┘
                                          │          │
                                          └──────────┘
                                          Continue with ER
                                            processing
```
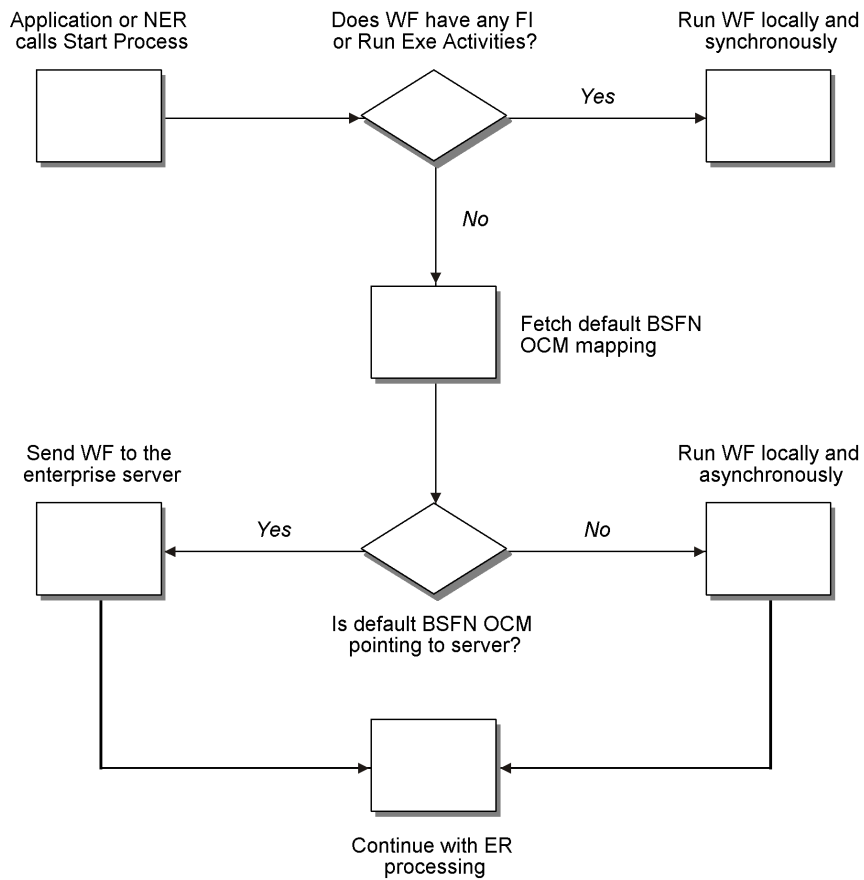
Sign-On Environment Dependency

Workflow tables are not written to when the sign-on environment is local, and the workflow is running on the server. The server cannot write to or update a database on a client workstation. When the sign-on environment is local, the workflow must run locally as well.

The following illustration shows a workflow process called from a named event rule. The workflow process always runs on the same machine as the name event rule.

```
  NER (either on          ┌──────────┐
  server or client        │          │
  workstation)            │          │
                          └────┬─────┘
                               │
                               ▼
  Does Workflow have      ◇─────────◇        Yes        ┌──────────┐    Run Workflow
  Form Interconnect       │         │ ─────────────────▶│          │    synchronously
  or Run Executable       ◇─────────◇                   └──────────┘
  activities?
                               │
                              No
                               │
                               ▼
  Run Workflow           ┌──────────┐
  asynchronously         │          │
                         └──────────┘
```
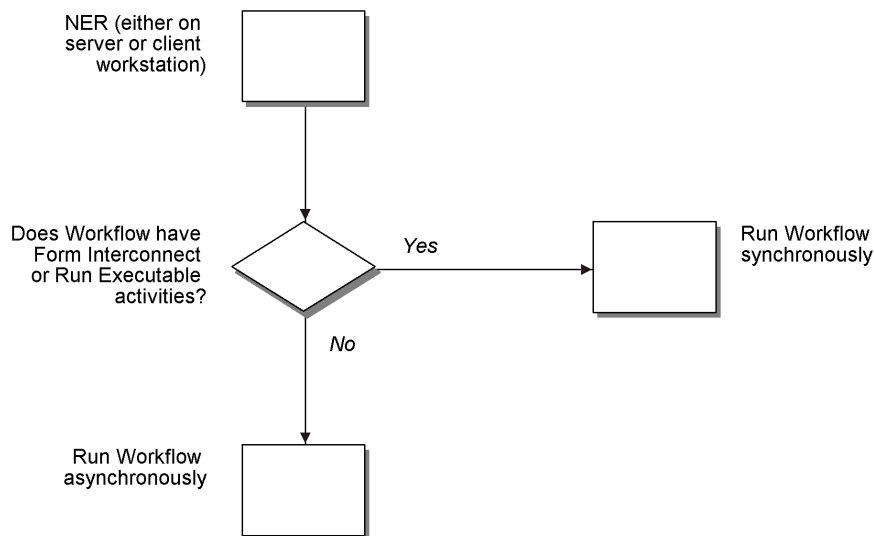
Workflow System Functions

You can use the system functions, *StartProcess* and *CompleteActivity*, for asynchronous processing. You can use the system functions, *StartProcessInline* and *CompleteActivityInline*, for synchronous processing.

If an application depends on a workflow process to complete before continuing with subsequent event rule logic, then you must use *StartProcessInline*.

Several system functions for workflow processing are available. Refer to the Online APIs for more information about specific system functions.

Transaction Processing

If a named event rule that is included in a transaction calls any workflow system function, regardless of whether the workflow processes are synchronous or asynchronous, the workflow process is not included in the transaction. Therefore, the workflow process is permanently written to the tables even if the transaction rolls back.

Workflow Boundaries

The *StartProcess* and *CompleteActivity* system functions run asynchronously in interactive applications, named event rules (NER), and table event rules (TER).

The *StartProcessInLine* and *CompleteActivityInline* system functions run synchronously in interactive applications, named event rules (NER), and table event rules (TER).

Workflow processes in batch applications and sub-process activities within a workflow always run synchronously, so only the *StartProcessInLine* and *CompleteActivityInLine* system functions are available in Report Design Aid and sub-process activity definition. All event rules for existing batch applications that call *StartProcess* and *CompleteActivity* continue to be displayed as they are, but the workflow processes run synchronously.

The following table illustrates various workflow scenarios. These scenarios assume that the workflow process does not include a form interconnection and does not run executable activities.

Scenario	System Function Used	Behavior of Workflow
UBE > Workflow	StartProcess/CompleteActivity (in existing applications)	Synchronous
UBE > Workflow	StartProcessInline/CompleteActivityInline	Synchronous
Application > Workflow	StartProcess/CompleteActivity	Asynchronous
Application > Workflow	StartProcessInline/CompleteActivityInline	Synchronous
UBE > NER/TER > Workflow	StartProcess/CompleteActivity	Synchronous
UBE > NER/TER > Workflow	StartProcessInline/CompleteActivityInline	Synchronous
Application > NER/TER > Workflow (Synchronous NER)	StartProcess/CompleteActivity	Asynchronous
Application > NER/TER > Workflow (Asynchronous NER)	StartProcess/CompleteActivity	Asynchronous
Application > NER/TER > Workflow	StartProcessInline/CompleteActivityInline	Synchronous
Application > Synchronous Workflow > NER activity > Workflow2	StartProcess/CompleteActivity	Workflow2 Asynchronous
Application > Synchronous Workflow > NER activity > Workflow2	StartProcessInline/CompleteActivityInline	Workflow2 Synchronous
Application > Asynchronous Workflow > NER activity > Workflow2	StartProcess/CompleteActivity	Workflow2 Asynchronous

Application > Asynchronous Workflow > NER activity > Workflow2	StartProcessInline/CompleteActivityInline	Workflow2 Synchronous with respect to the first workflow
Workflow > Workflow subprocess activity	StartProcess (in existing Workflow processes)/StartProcessInline	Synchronous

Appendices

Workflow Tables

Listed below are the tables that are used by the Enterprise Workflow Management system:

Address Organization Structure Master File	F0150
Workflow Message Security	F01137
Process Master	F98800
Activity Master	F98810
Activity Specifications	F98811
Process Activity Associations	F98830
Organizational Structure Master	F98840
Organizational Structure Rule	F98845
Process Instance	F98860
Activity Instance	F98865

System Functions

Refer to the system function documentation in the Online API guide for more information about these system functions.

Message System Functions

Message system functions include the following:

SendMessage	Sends a message through the OneWorld mail system
Update Message	Modifies information associated with a message that has already been added using SendMessage
ForwardMessage	Forwards a OneWorld message automatically using a system function
DeleteMessage	Removes a message which was created using SendMessage
TemplateSubstitution	Allows the user to fill the message template with the substitution values and then receive the completed message template back in a text string. The output string can be displayed on the screen or printed on a report as generic text.

Workflow System Functions

Workflow system functions include the following:

GetActivityInstanceForKey	Retrieves the active Workflow activity instance information for a given key
CompleteActivity	Completes an activity instance
GetProcessInstanceAttributes	Retrieves the key and attribute data structures for a given process instance
GetProcessInstanceForKey	Retrieves the Workflow process instance for a given key
UpdateProcessInstanceAttributes	Updates the attributes for a given process instance
UpdateProcessInstanceAttributeSingle	Updates a single process attribute for a given process instance
StartProcess	Starts a workflow process

Distribution List Scenarios

This section includes several scenarios that illustrate how Workflow processes proceed through workflow activities for single-level and multiple-level distribution lists. These scenarios follow the same Credit Limit example that is used throughout this manual. Each scenario includes the setup used for a specific workflow process and the results that occur when that setup is used.

Before You Begin

❑ Before you read the distribution list scenarios in this section, you should understand creating workflow processes. For more information, see *Creating Workflow Processes.*

Reviewing Distribution List Guidelines

Depending on how you set up distribution lists and threshold values, situations might arise where an action message is not sent to any member of a distribution list. In these situations, you must ensure that a process instance can complete successfully. When an action message is not sent, the activity conditions surrounding that action message must have a default value that allows the workflow to continue. When you start a process, you can default in a value for the data item that your activity conditions use for comparison.

If the originator is in the distribution list, messages will not be sent to people in a lower group no matter what the threshold values are.

For multi-level distribution lists, if the originator is not in the list, the process will end in error.

Single-Level Distribution Lists

Scenario 1: Single-Level Distribution List

This scenario uses a single-level distribution list. The originator of the process is not included in the distribution list.

Setup

The information below illustrates a typical distribution list setup for the Credit Limit example.

A/B #	Description	Group #	Threshold Value
7101	Clerk #1	1	5000
7102	Clerk #2	1	5000
7103	Clerk #3	1	10000
7201	Manager #1	2	10000
7202	Manager #2	2	15000
7203	Manager #3	2	20000
7301	Director #1	3	20000
7302	Director #2	3	25000
7303	Director #3	3	25000
7401	VP #1	4	30000
7402	VP #2	4	30000
7501	President	5	31000

Results

The following results illustrate to which A/B numbers that messages would be passed. The value passed is the dollar amount used to determine which address book numbers receive the message. The address book numbers to the right are the result.

Value Passed												
4500	Not sent to list											
9500	7101	7102										
14500	7101	7102	7103	7201								
19500	7101	7102	7103	7201	7202							
24500	7101	7102	7103	7201	7202	7203	7301					
29500	7101	7102	7103	7201	7202	7203	7301	7302	7303			
30500	7101	7102	7103	7201	7202	7203	7301	7302	7303	7401	7402	
31500	7101	7102	7103	7201	7202	7203	7301	7302	7303	7401	7402	7501

Scenario 2: Single-Level Distribution List

In this scenario, the same setup is used as in Scenario 1, except that all threshold values are 0. The originator is not in the distribution list.

Setup

A/B #	Description	Group #	Threshold Value
7101	Clerk #1	1	0
7102	Clerk #2	1	0
7103	Clerk #3	1	0
7201	Manager #1	2	0
7202	Manager #2	2	0
7203	Manager #3	2	0
7301	Director #1	3	0
7302	Director #2	3	0
7303	Director #3	3	0
7401	VP #1	4	0
7402	VP #2	4	0
7501	President	5	0

Results

No matter what value is passed, the process goes through the entire distribution structure. Every A/B number gets a message.

Scenario 3: Single-Level Distribution List

This scenario uses a single-level distribution list. The originator of the workflow is not included in the distribution list.

Setup

Each group level in the distribution list is set to 1. A threshold value of 100 is used for each person.

Group	Name	Threshold Value
1	Tom	100
1	Barb	100
1	Tim	100
1	Dan	100

Results

Every A/B number is given a message if the amount sent is greater than the threshold.

Data Value	Sent to All #'s in Group
90	Did Not Send
110	Yes

Multiple-Level Distribution Lists

Scenario 4: Multiple-Level Distribution List

This scenario uses a multiple-level distribution list with threshold values. The originator is in the distribution list. If the originator is not in the multiple-level distribution list, the workflow fails.

Setup

All group levels are group 1 and threshold values are denoted in parentheses. The originator is 7101.

President
7501
(31000)

VP #1
7401
(30000)

VP #2
7402
(30000)

Director #1
7301
(20000)

Director #2
7302
(25000)

Director #3
7303
(25000)

Manager #1
7201
(10000)

Manager #3
7203
(20000)

Manager #2
7202
(15000)

Clerk #3
7103
(10000)

Clerk #1
7101
(5000)

Clerk #2
7102
(5000)

Results

If the value passed is lower than the originator or the originator's manager's threshold, the workflow will not send the action message. To prevent this situation, set a default value for the action messages that are not sent. For the Credit Limit scenario, you would probably accept the value passed amount because it is not a significant amount.

Value Passed				
4500	Not sent to list			
9500	Not sent to list			
14500	7201			
19500	7201			
24500	7201	7301		
29500	7201	7301		
30500	7201	7301	7401	
31500	7201	7301	7401	7501

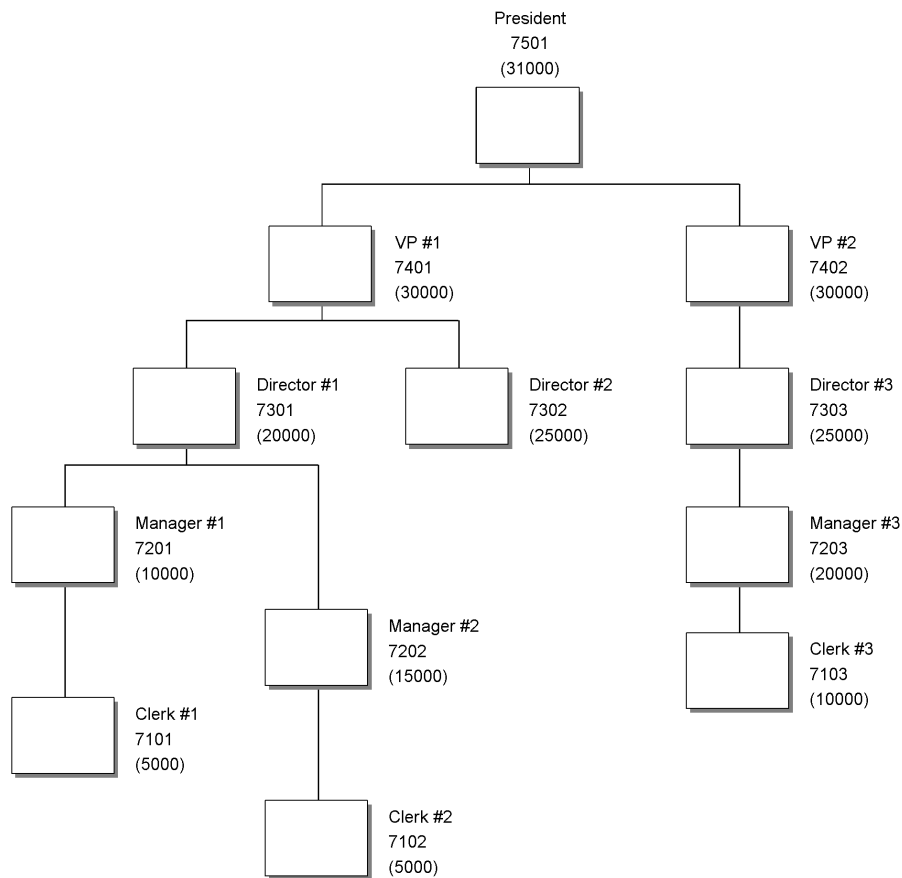**Scenario 5: Multiple-Level Distribution List**

This scenario uses a multiple-level distribution list with threshold values all set to 0. The originator is in the distribution list.

Setup

The originator is Clerk #1.
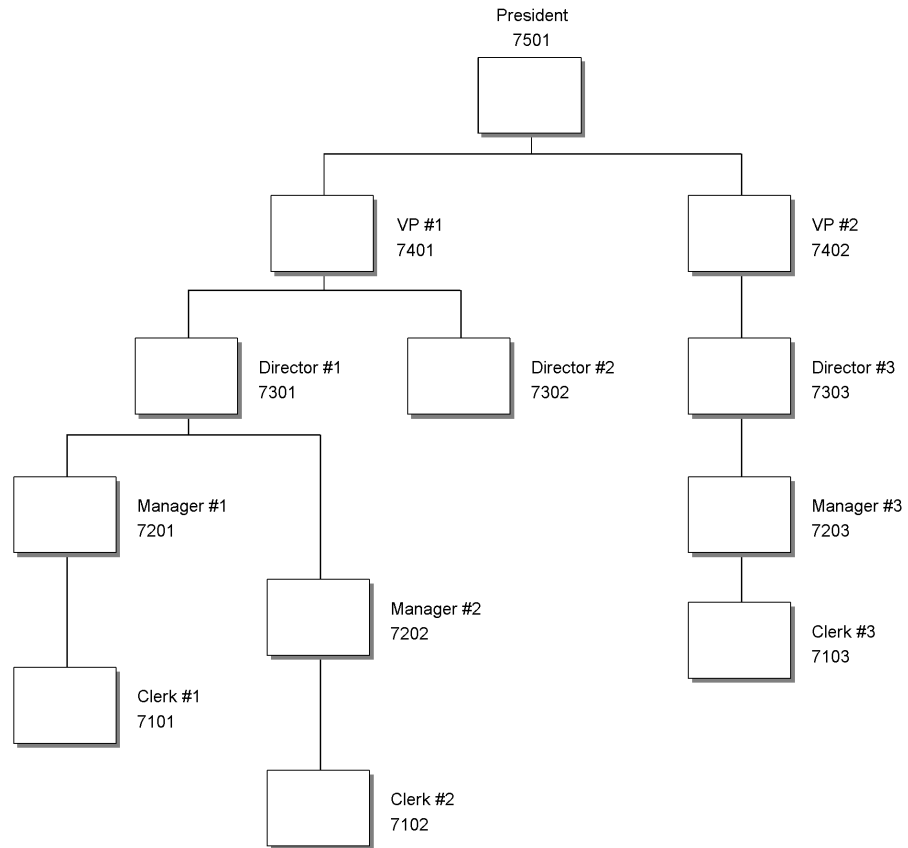
Results

Since there are no threshold values, everyone is sent the message.

Value Passed				
4500	7201	7301	7401	7501
9500	7201	7301	7401	7501
14500	7201	7301	7401	7501
19500	7201	7301	7401	7501
24500	7201	7301	7401	7501
29500	7201	7301	7401	7501
30500	7201	7301	7401	7501
31500	7201	7301	7401	7501

Scenario 6: First Response Single-Level Distribution List

This scenario uses the same setup as Scenario 1. It uses a single level distribution list and the originator of the process is not included in the distribution list. This scenario shows the first response checked in a Single-Level Distribution List setup.

Setup

A/B #	Description	Group #	Threshold Value
7101	Clerk #1	1	5000
7102	Clerk #2	1	5000
7103	Clerk #3	1	10000
7201	Manager #1	2	10000
7202	Manager #2	2	15000
7203	Manager #3	2	20000
7301	Director #1	3	20000
7302	Director #2	3	25000
7303	Director #3	3	25000
7401	VP #1	4	30000
7402	VP #2	4	30000
7501	President	5	31000

Results

At a specific group level, the first individual to respond dictates how the process continues. For example, the response may tell the process to end the activity or to move on to the next higher group level in the distribution list.

The first response is not necessary in a multiple-level distribution list. If you have a situation where a clerk has two managers directly above him or her, both managers receive the message. The first manager to respond dictates how the process proceeds.

Scenario 7: Higher Level Override Single-Level Distribution List

This scenario shows higher level overrides in a single level distribution list with threshold values. The originator is in the distribution list.

Setup

The following setup uses Clerk #1 (A/B# 7101) as the originator. The value passed in is 31500.

A/B #	Description	Group #	Threshold Value
7101	Clerk #1	1	5000
7102	Clerk #2	1	5000
7103	Clerk #3	1	10000
7201	Manager #1	2	10000
7202	Manager #2	2	15000
7203	Manager #3	2	20000
7301	Director #1	3	20000
7302	Director #2	3	25000
7303	Director #3	3	25000
7401	VP 1	4	30000
7402	VP 2	4	30000
7501	President	5	31000

Results

All A/B numbers above Group #1 show up in Process Activity Monitor in an awaiting status except for Manager #1 and Manager #2, which show an unopened status.
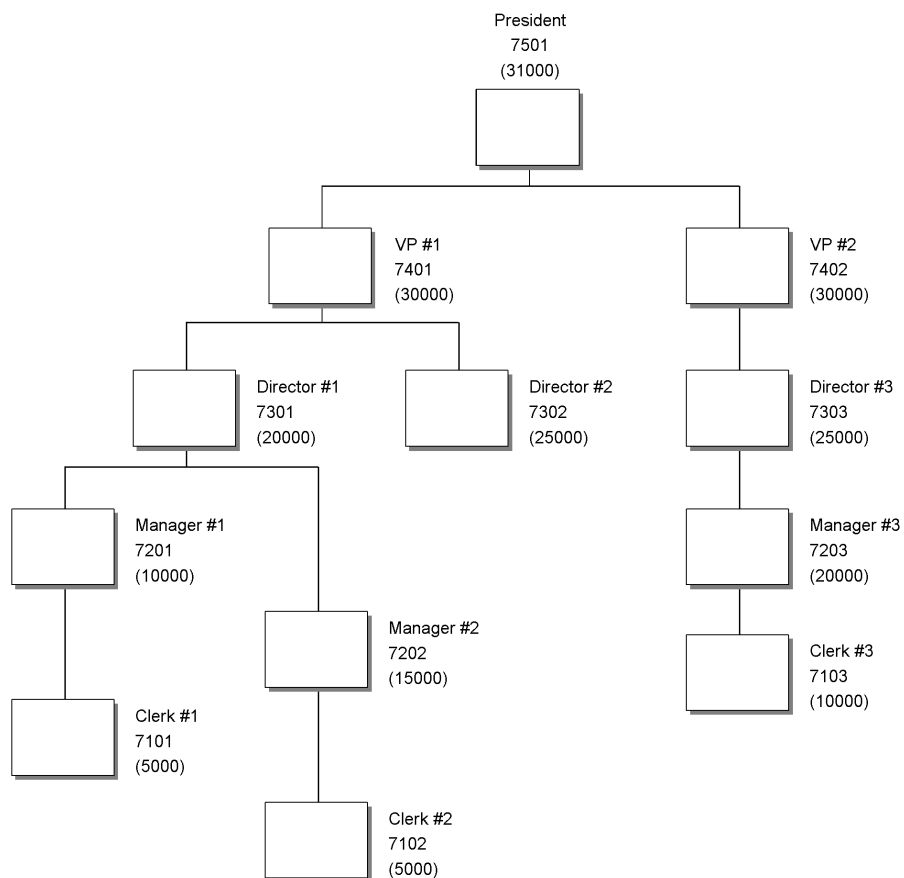
When this process is run, a user of higher group number can come in and override the workflow process to continue to the next activity. For example, in this scenario, if you sign into OneWorld as President and do a higher level override on Clerk #1, all A/B users display as bypassed, and the process ends as expected.

Scenario 8: Higher Level Override Multiple-Level List

This scenario checks higher level overrides in a multiple-level distribution list with threshold values. The originator is in the distribution list.

Higher Level Overrides Multiple-Level List Setup

All group levels are Group #1 and threshold values are in parentheses. The originator is Clerk #1. The value passed in by the workflow is 31500.

President
7501
(31000)

VP #1
7401
(30000)

VP #2
7402
(30000)

Director #1
7301
(20000)

Director #2
7302
(25000)

Director #3
7303
(25000)

Manager #1
7201
(10000)

Manager #3
7203
(20000)

Manager #2
7202
(15000)

Clerk #3
7103
(10000)

Clerk #1
7101
(5000)

Clerk #2
7102
(5000)

Results

All A/B numbers show up in the Process Activity Monitor in an awaiting status except for Manager #1, shows in an unopened status.

When this process is run, a user of higher group number can override the workflow process to continue to the next activity. For example, in this scenario, if you sign into OneWorld as President and do a higher level override on Manager #1, all A/B users display as bypassed, and the process ends as expected.