PeopleSoft.

EnterpriseOne B73.3.1 Enterprise Workflow Management PeopleBook

June 1999

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Why Workflow Management Is Important

In the past, companies often benefited greatly from *economies of scale*, or the reduction of production costs that is achieved with increased output. These economies were possible because companies were typically manufacturing 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 in their choices and often expect highly complex services to go with the products they buy.

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 in place the flexible business infrastructures and tools to quickly develop new products and services and continuously outperform their competitors' time to market.

The dependence of today's business enterprises on fast innovation and 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 (*Workflow Imperative*, Thomas M. Koulopoulos). With this new emphasis on relentless innovation and the advantages it breeds, successful companies will constantly be searching for ways to reshape their corporate structures to promote streamlining of their business processes.

Workflow Management: Streamlining Business

It is clear that we are at a point in time where 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 this 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 the performance of those tasks) and automating the remaining tasks that are necessary to 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 and data have migrated 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 (*Workflow Imperative*, James G. Kobielus).

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.
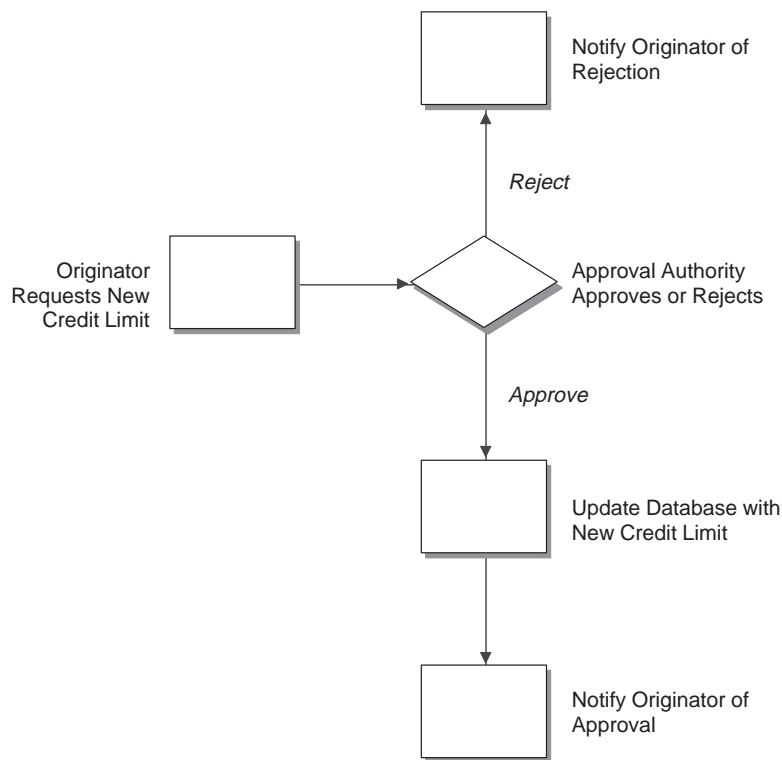
The Benefits of Workflow Management

Because organizations are made up of a series of intricately intertwined business cycles, these cycles are a logical first place to look when attempting to streamline. And there might be room for improvement in this area. According to the Workflow Management Coalition, almost 90% of all time 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 in such a way 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
- The flexibility bred from software control over processes, which enables their future redesign in response to changing business needs

Workflow Enhancement Scenario

Information critical to a workflow process can be predefined and stored in database tables, allowing a computer system to automate the flow of information and tasks throughout the enterprise. This automation can minimize the need to rely on physical meetings to reenter 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 predefined workflow information might include order activity rules, workflow steps, and expenditure authorization requests, all of which can be routed automatically via e-mail.

This section contains a scenario that 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 sequential procurement method. 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

Central Stores

Accounts Payable

Department Director

Central Office (Purchasing Clerk)

Administrative Assistant

Courier

Encumbrance Clerk

Comptroller

Department Supervisor

Purchasing Manager

Buyer

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 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 item, 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 the 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 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 the 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 could 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 lapses.)

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 copy, 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, 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

Department Director

Accounts Payable

Purchasing Manager

3

8

4

Administrative Assistant

2

JDEdwards

J.D. Edwards Enterprise Workflow Management optimizes resources through workflow enhancement and reduction of manual processes, resulting in significant savings and fewer errors.

1

7

6

5

Department Supervisor

Central Stores

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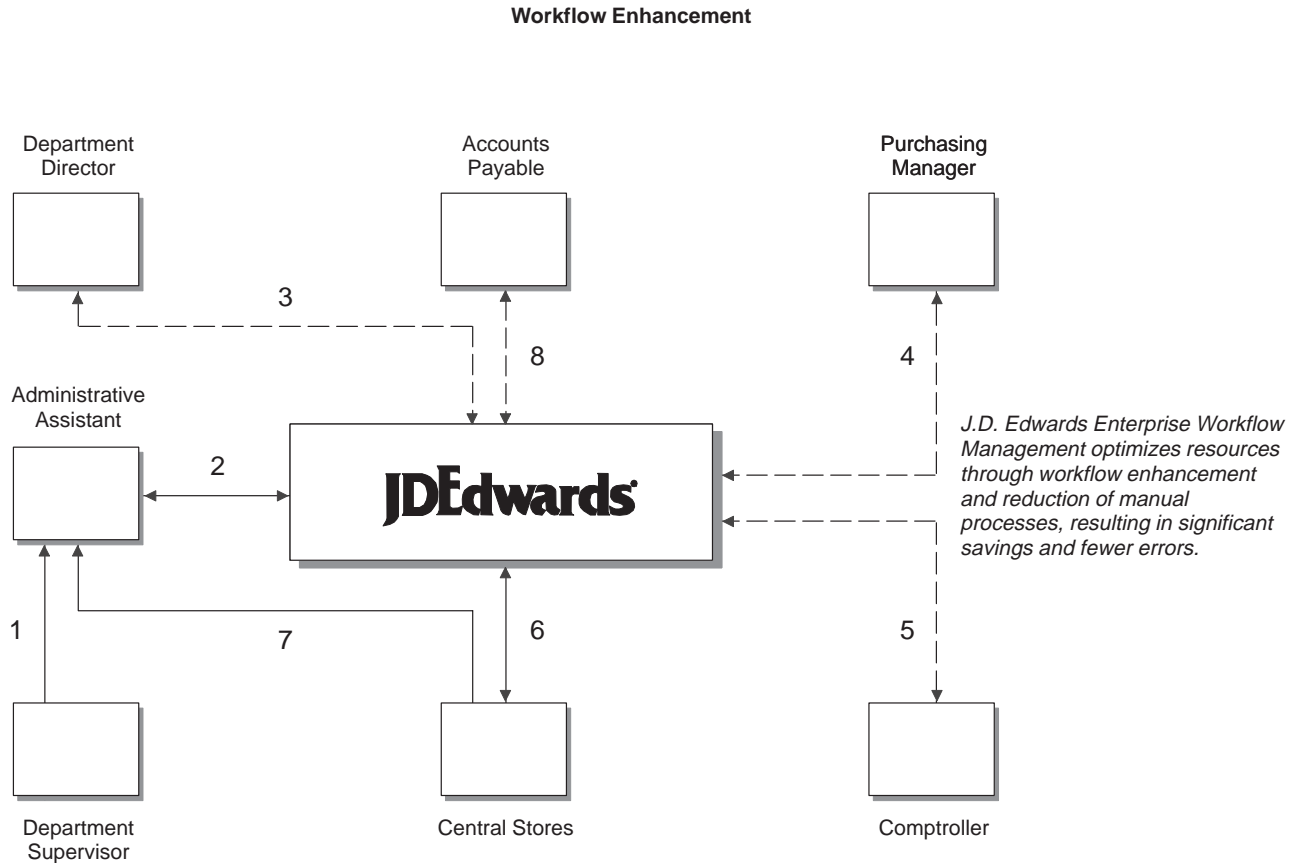
Using Enterprise Workflow Management, this organization streamlined its workflow process as described in the following steps.

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

24. 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 OneWorld Workflow Table hierarchy and the amount of the item.

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

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

27. The comptroller reviews and approves the purchase order when required.

28. 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.

29. The administrative assistant receives the item the next day.

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

Total time (in minutes): 27

J.D. Edwards Brings Ideas to Action

J.D. Edwards has built into OneWorld a number of useful workflow management tools. With these tools, you can easily 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 into 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.

References

If you would like to learn more about workflow processes, refer to the following sources:

- *Workflow Strategies*, by James G. Kobielus, 1997, IDG Books Worldwide, Inc., Foster City, California.

- *The Workflow Imperative*, by Thomas M. Koulopoulous, 1995, John Wiley & Sons, Inc., New York, New York.

- *Workflow Management Coalition*, http://www.aiim.org/wfmc/mainframe.htm

Enterprise Workflow Management Overview

OneWorld Enterprise Workflow Management (referred to hereafter as 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 a totally automated and extremely efficient process with minimal user involvement, which allows you to streamline your existing business processes, increasing efficiency and reducing process time. Moreover, Workflow uses the tools already in place for 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:

- From the Work Center
- From Employee Queue Manager
- From third-party e-mail systems

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 OneWorld Workflow model is based on two important principles:

Routes   Routes define the path along which the Workflow engine moves an object. This object could be a message, a document, or a form. Routing can be simple, meaning it is typically sequential; or it can be complex, meaning it involves joins or splits, parallel routing, or iteratives routing (looping).

Rules
Rules define what information is to be routed and to whom. Rules define the conditions that must be met for the Workflow engine to progress from one step to the next. Logic can be contingent upon predefined threshold values, or it can be simple enough to just move to the next step in a process.

OneWorld Enterprise Workflow Management supports the following types of Workflow processes:

Scripted
Scripted workflow automates business processes that are repetitive or that can be predefined. This type of workflow can be highly automated and requires minimal user interaction, such as 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.

Ad-hoc
Ad-hoc workflow provides a less structured form of workflow. Ad-hoc workflow is suited to environments in which business processes constantly change or are specific to a particular task or project. Under these circumstances, users can manually control the steps in a process instead of allowing the Workflow system to automatically control the process. You do not script ad-hoc processes; rather, they are most often e-mail messages written from one user to another and are not automatically generated by a Workflow process.

For example, you can send a message to a supervisor that requests approval of batches in Credit Collections. The supervisor must manually approve each batch item to approve the ad-hoc message.

For more information about sending messages, see the *OneWorld Foundation Guide*.

Enterprise Workflow Technology

Enterprise Workflow Management incorporates the following technologies:

Universal routing sheets

User-defined rules guide the flow of work for a particular process. For example, when you enter a sales order you can initiate an entire customer fulfillment process, including billing, work order generation, inventory replenishment, forecasting, scheduling, and so on.

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 to 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, origin, and so on.

Separation of business rules from technology

A single OneWorld application can adapt to numerous routing situations without having programmers rewrite the source code. Many other integrated applications do not have this flexibility because 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, the Workflow system incorporates graphical display and control for Workflow 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, 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 to any event within an application or batch process. You can also attach a Workflow process through named event rules or through 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.

Enterprise Workflow Management 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 process improvement analysis and auditing.

What does this mean to you? All of the technology, rules, and principles explained above allow you to work more efficiently by reducing cycle time. Errors are reduced because the process is automated, which also means you will have less paperwork to deal with. Furthermore, by using OneWorld development tools, you can 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 the unlimited flexibility to incorporate your creative 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 starts 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. Activity conditions within the process determine which activity will execute based on the approver's response. The lines in the graphic labeled "Ifapprove" and "Ifreject" illustrate the activity conditions.

If the approver approves the change, a business function (a Function activity within the OneWorld Workflow system) updates the database with the new information (such as the customer's new credit limit). The system then sends a message back to the approver, 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 that the request was rejected. The database remains unchanged if the request is rejected.
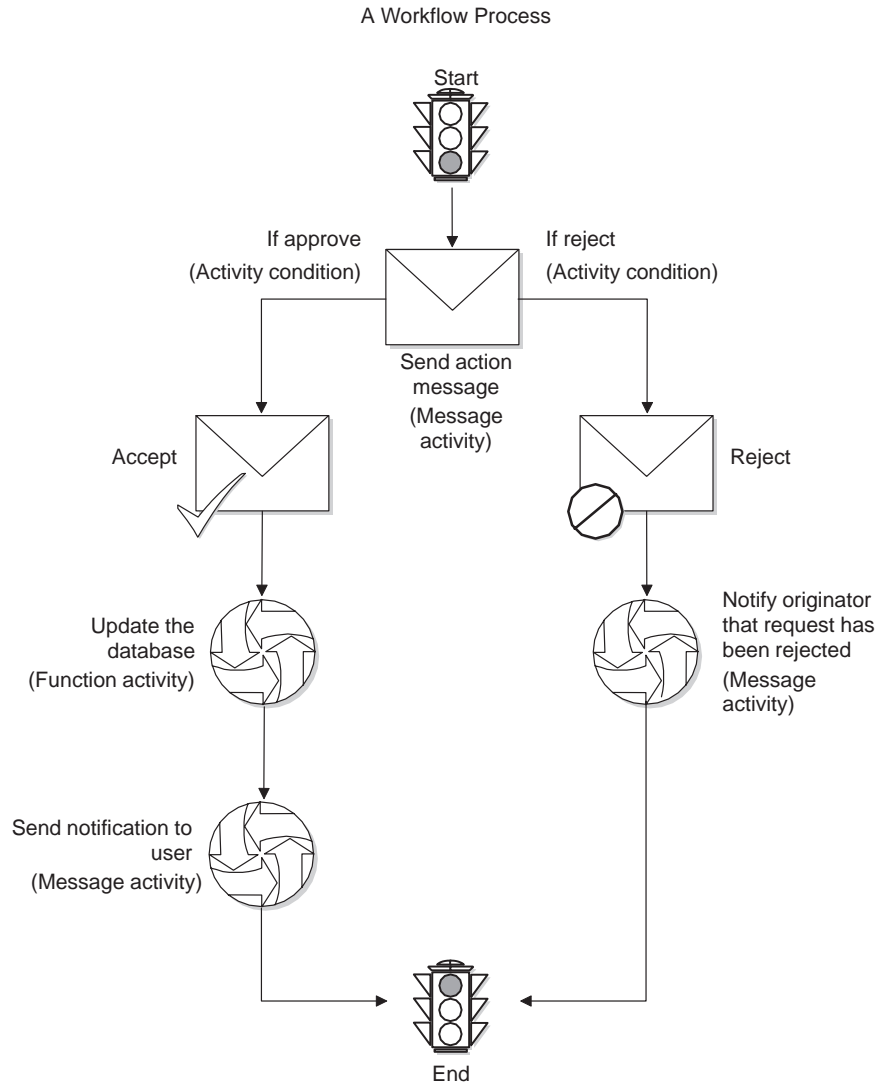
A Workflow Process

Each icon in this graphic represents an activity that takes place within a process. There are eight activities that you can set up in a process:

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 or named event rules. For example, you can set up a function activity that updates the database if someone 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 the key data structure and additional data structure.
	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 batch process (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 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 batch process (R98810), which you can start manually or schedule, monitors processes that have been halted.

Activity condition	User-defined rules that determine which activity will execute and what happens when that activity executes. For example, an activity condition called "IFAPPROVE" might trigger the system to invoke the activity that will update the database if a user approves a message, then invokes the activity that sends a message notifying the originator that the message was approved. An activity called "IFREJECT" would trigger the system to invoke the activity that sends a message to the originator notifying him that the message was rejected.
Recipient condition	This determines where to send messages. Recipient conditions are used when defining recipient rules. For example, you might set up a recipient condition called IFACCTG that uses the customers' address book number as the criterion to determine where to send messages. You could add logic to the recipient condition that tells 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's distribution list. You can have multiple recipient conditions in a recipient rule.

After a process is activated, the process and activity definitions are protected, 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, you can 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.
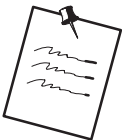
If instances of a process exist, you must copy the process and make changes to the copy. If you deactivate a process with instances, you cannot change it.

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 through Advanced Analysis.

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

Example of a Workflow Process

The OneWorld 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 this 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 will not reflect the new credit limit in the customer's record until the requested change is approved.
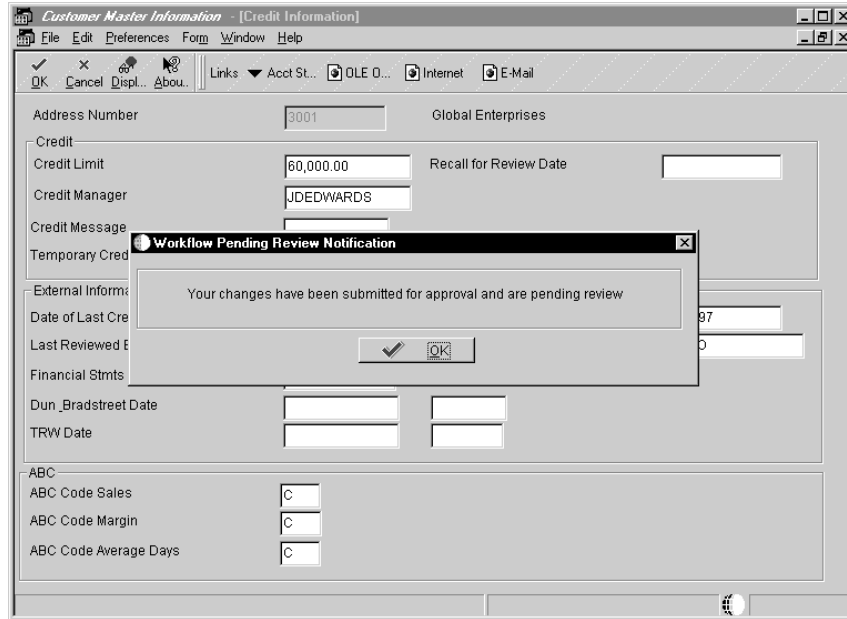
Note that the message box shown in this example is specific to the Credit Limit Changed process and will not show up automatically in a process that you set up. You can add a message box similar to this one through a form interconnect when you attach a process to an application. See *Attaching a Process to an Application* for more information.

The person who will approve the change (the approver) receives a message in the Credit Management Queue through the Employee Work Center. The message indicates that the change is pending approval.
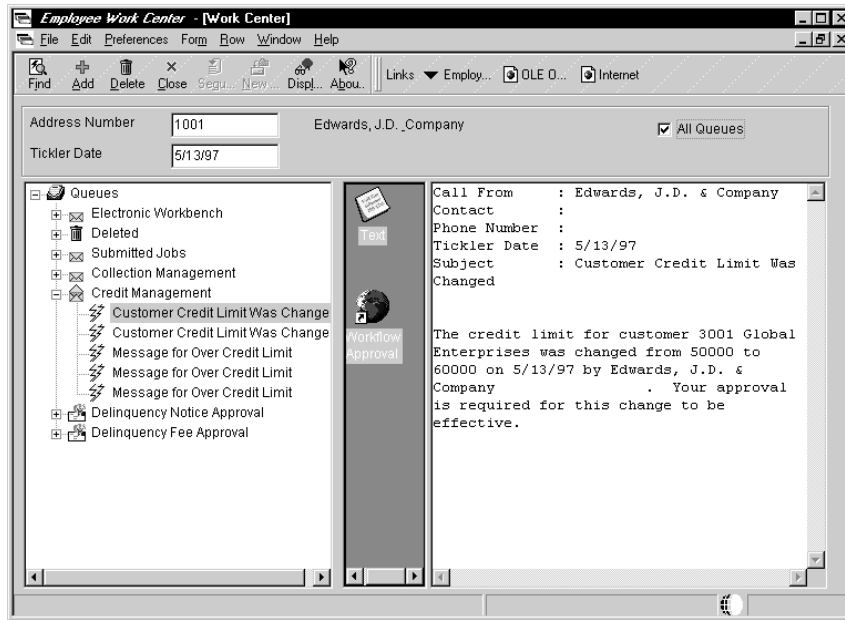
To approve or reject the change, the approver clicks the "Customer Credit Limit Was Changed" message then clicks the Workflow Approval icon, which opens a form in which the approver can approve or reject the message. This form also allows the approver to add supplemental information about the approval 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 them of the rejection.

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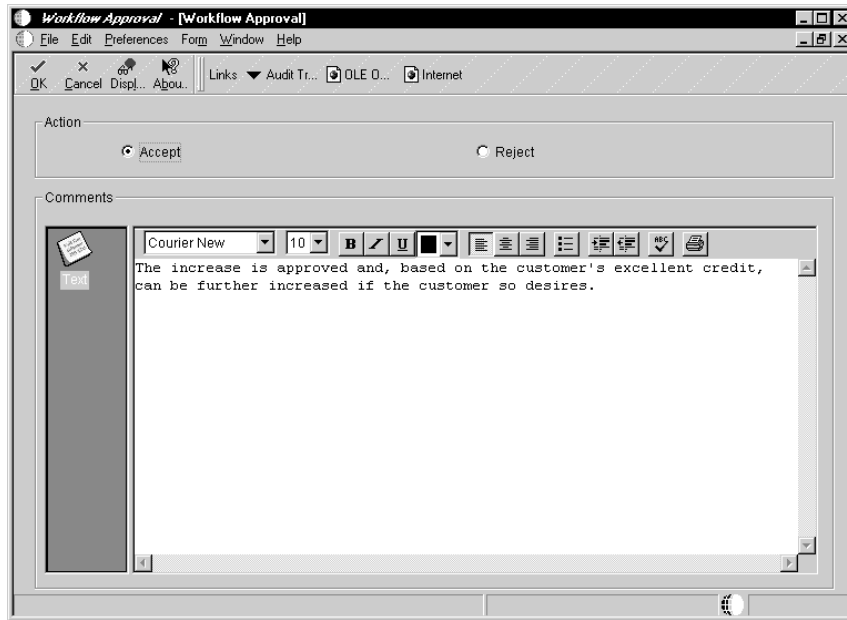
At this point, the process sends a message to the user who originated the credit limit change, indicating that the credit limit change was approved.
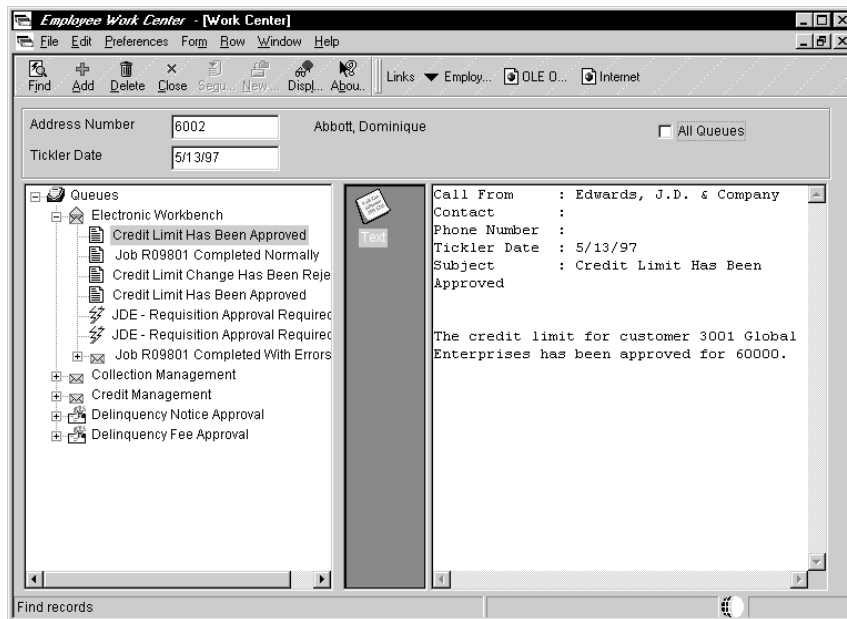
Planning for Workflow

Though powerful, workflow management is only a tool that enables your well-managed business to run even more efficiently. Workflow management is essentially value-neutral, meaning that it will not substantially improve the efficiency of processes that are poorly designed to begin with. Therefore, before thinking about ways to better manage your internal workflows, your company should first complete some degree of business process reengineering. This 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 Enterprise Workflow Management, you should do the following:

❑ Understand the concepts of OneWorld development tools. For more information, see the *Development Tools Guide.*

❑ Define your users and distribution lists in Address Book prior to setting up your Workflow processes. See the *Address Book Guide* 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 Third-Party Mail Systems* in this guide.

Creating a Diagram of an Organizational Schematic

The first step in reengineering is to get a clear picture of 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 (*Workflow Imperative*, Thomas M. Koulopoulos).

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 performing 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 could benefit from workflow management solutions, produce a short list of high-priority, high-feasibility projects.

Once this short list has been compiled, 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 in order of importance the performance criteria listed above 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   This approach focuses 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

Once you have identified the business processes that will benefit most from workflow management, complete the following steps in the design process:

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

32. Give the process a description using a maximum of 40 characters.

33. 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 eventually include 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.

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

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

36. Identify your primary data structure and attribute data structure. The primary data structure contains the data items that make an instance of a process unique. The attribute data structure contains all the data that the process (and any activity within that process) needs to complete the flow.

37. Define the messages that the process will generate.

38. Organize distribution lists for the messages your process will generate. Distribution lists allow you to group employees into categories for message routing purposes.

39. Define any activity conditions.

40. Define recipient rules that might affect the process. Recipient rules determine to whom or to which distribution list a message will be sent.

After you have performed these tasks, you can begin creating your workflow processes using Enterprise Workflow Management.

Workflow Setup

In addition to creating the Workflow process, you should also set up components that the process will use. These components include:

- Message templates, which Workflow processes use to present messages to users that contain specific information, or that contain information that is substituted from data items within the process.

- Data structures, which Workflow processes use to pass data to and from database tables, messages, and business functions. Effective with release B73.3.1, you can create the required data structures as you create your workflow process. Prior to B73.3.1, you must create data structures in the Object Librarian before creating a workflow process.

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

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

This section describes the following:

- ❑ Setting up Workflow message templates

- ❑ Setting up queues

- ❑ Setting up third-party mail systems

Setting Up Workflow 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 and additional data structures.

You can set up a new message template before you begin creating a Workflow process, or, if you are using the Workflow Director, you can 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 Workflow message template**

From Data Dictionary Design (GH951), choose Workflow Messages (P92002).

1. On Work With Glossary Items, click Add.

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

    - Alias

    - Glossary Group

      Enter a Y to identify this 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 a 3.

3. Click on the Item Glossary tab.

4. Enter the text for the message.

    If the message contains values that will be substituted by data items from your key and additional data structures, 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.
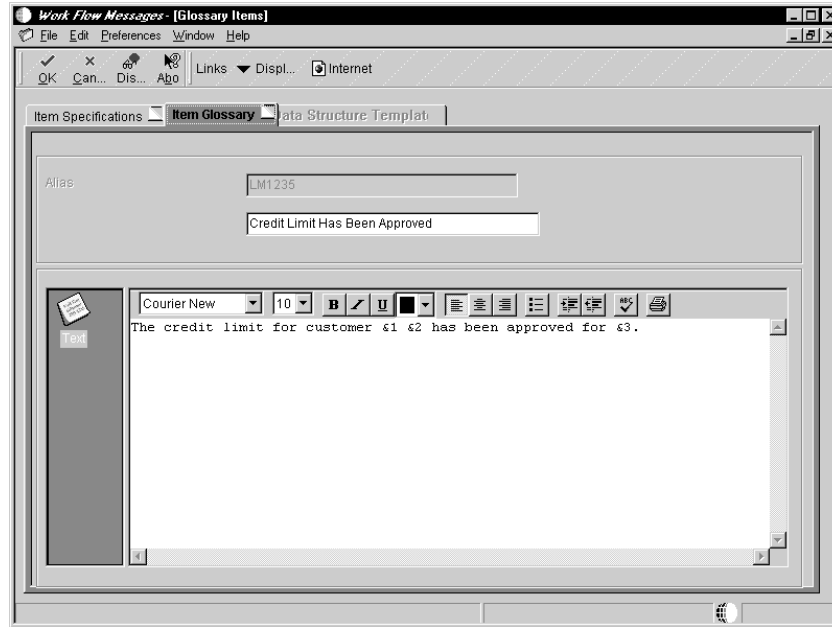
5. Click the Data Structure Template tab.

6. Map the data structure parameters as necessary.

   The order of the data structure is the index of the &x. For example, if the structure contains four members, assign &1 to the first member, &2 to the second, and so on.

7. Click OK when you have finished setting up the message template.

Field	Explanation
Alias	For World, the RPG data name. This data field has been set up as a 10-byte field for future use. Currently, it is restricted to 4 bytes so that, when preceded by a 2-byte table prefix, the RPG data name will not exceed 6 bytes.
	Within the Data Dictionary, all data items are referenced by this 4-byte data name. As they are used in database tables, a 2-character prefix is added to create unique data names in each table specification (DDS). If you are adding an error message, this field must be left blank. The system assigns the error message number using next numbers. The name appears on a successful add. You should assign error message numbers greater than 5000. Special characters are not allowed as part of the data item name, with the exception of #, @, $.
	You can create protected data names by using $xxx and @xxx, where you define xxx.
	For OneWorld, a code that identifies and defines a unit of information. It is an 8-character, alphabetical code that does not allow blanks or special characters such as: % & , . +.
	Create new data items using system codes 55-59.
	The alias cannot be changed.
Glossary Group	For World, a code which designates a type of data used to select data dictionary terms for printing. See User Defined Codes, system code '98', record type 'GG'.
	The data item names for error messages are assigned automatically.
	NOTE: If you need to assign your own error message numbers, use 4 digit numbers greater than '5000'.
	The data item name for a non-database field (used on a video or report but not in a file – glossary group U) must begin with a #, $ or @.
	For help text (glossary group H), the data dictionary "Inquiry/Revision Program" field may be used to specify the name of a follow-on item.
	To create your own messages for the IBM message file (glossary group J), begin the data item name with your own three characters (e.g., CLT0001).
	For OneWorld, this field is used to designate the type of data item. It is validated against user defined code table H98/DI.
	Items in glossary group D or S can be included in database tables. Items in other glossary groups (for example, error messages) cannot be added to a table.

Field	Explanation
Language	A user defined code (01/LP) that specifies a language to use in forms and printed reports. Before any translations can become effective, a language code must exist at either the system level or in your user preferences.
Product Code	A user defined code (98/SY) that identifies a J.D. Edwards system.
Description	Categorizes data item names. Enter text in upper and lower case. The system uses this field to search for similar data items. To enter an alpha description, follow these conventions: Dates – Begin all Date fields with Date Amounts – Begin all Amount fields with Amount Units – Begin all Unit, Quantity, and Volume fields with Units Name – Begin all 30-byte description fields with Name Prompt – Begin any Y/N prompting field with Prompt Address Number – Begin all address numbers (employee, customer, owner) with Address Number
Error Level	This field indicates the severity of the error message and to denote warning messages.

See Also

- *Creating Text Substitution Error Messages* in the *OneWorld Development Tools Guide*

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 for submitted jobs. Through a queue, users can approve or reject certain activities in the process flow. You set up a queue the same as you would set up any User Defined Code.

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 would gather 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 is 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 i*n the *OneWorld Foundation Guide* for information about attaching shortcuts to messages.

Complete the following tasks:

- Set up a queue
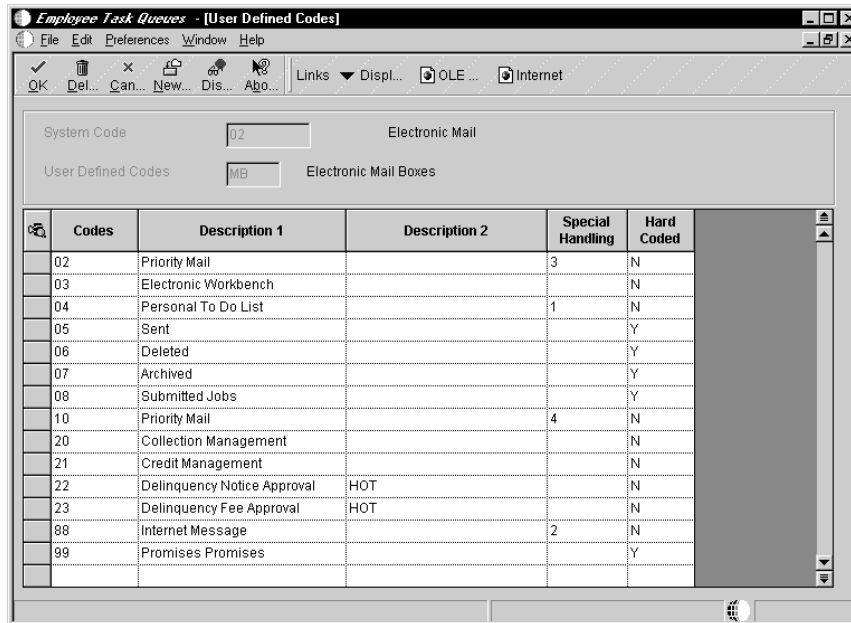
- Add a shortcut to a queue

▶   **To set up a queue**

From Workflow Management Setup (G0241), choose Workflow User Defined Codes (G02411), then choose Employee Task Queues.

On Work With User Defined Codes
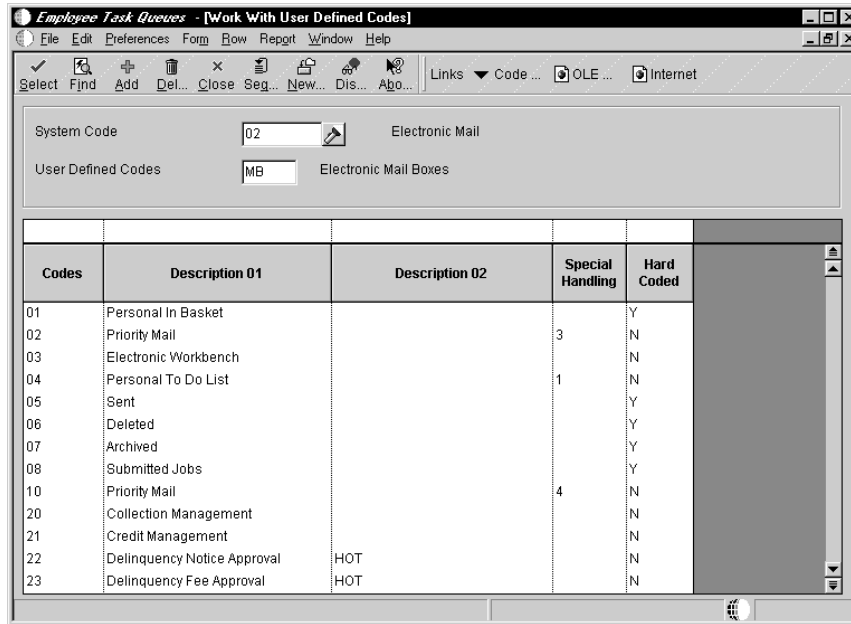
1. Click Add.

2. On User Defined Codes, complete the following fields in an empty row on the grid 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. This field is optional.

- Special Handling

- Hard Coded

  Enter N in this field.

Field	Explanation
Codes	A list of valid codes for a specific user defined code list.
Description 1	A user defined name or remark.
Description 2	Additional text that further describes or clarifies a field in the J.D. Edwards systems.
Special Handling	A code that indicates special processing requirements for certain user defined code values. The value that you enter in this field is unique for each user defined code record type.
	The system uses the special handling code in many ways. For example, special handling codes defined for Language Preference specify whether the language is double-byte or does not have uppercase characters. Programming is required to activate this field.
Hard Coded	A code that indicates whether a user defined code is hard coded.
	Valid values are: Y The user defined code is hard-coded N The user defined code is not hard-coded
	For OneWorld, a check indicates that the user defined code is hard-coded.

▶   **To add a shortcut to a queue**

You add a shortcut to a queue that provides a link to a OneWorld application if, for example, you want a recipient to review information within a OneWorld application whenever they open messages in that particular queue.

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

1. On Work With Queues, click Add.
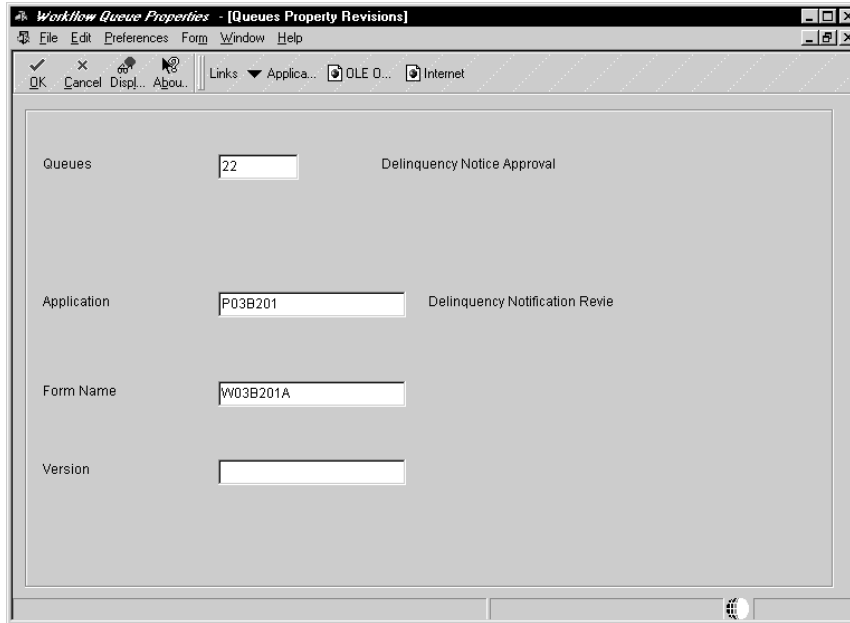
2. On Queues Property Revisions, complete the following fields and click OK:

- 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

Field	Explanation
Queues	A field that determines the mailbox associated with the queue that should be used on delivery of the message.

Field	Explanation
Application	The OneWorld architecture is object-based. This means that discrete software objects are the building blocks for all applications, and that developers can reuse the objects in multiple applications. Each object is stored in the Object Librarian. Examples of OneWorld objects include: • Batch Applications (such as reports) • Interactive Applications • Business Views • Business Functions • Business Functions Data Structures • Event Rules • Media Object Data Structures
Form Name	The unique name assigned to a form.
Version	Identifies a specific set of data selection and sequencing settings for the application. Versions may be named using any combination of alpha and numeric characters. Versions that begin with 'XJDE' or 'ZJDE' are set up by J.D. Edwards.

See Also

- *User Defined Codes* in the *OneWorld Foundation Guide*

Setting Up Third-Party Mail Systems

OneWorld provides an integrated mail system that allows OneWorld users to communicate with each other. To allow OneWorld users to communicate with others outside of Oneworld, you must enable a third-party external mail system.

If you choose to enable a third-party external mail system, you must add the following to the [JDEMAIL] section in the jde.ini file of each OneWorld client:

- `mailServer=smtp_server_name`

  (where *server_name* is the name of your Simple Mail Transfer Protocol [SMTP] server)

  The mailServer setting allows the SMTP server to send 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 would be listed in the TCP/IP host file on the server.

  This setting allows e-mail messages to be sent from a batch application that does not support messaging application programming interface (MAPI) protocol, for example, an HP9000 or AS/400 running on a server platform.

- `mailProfile=mapi'ProfileName'`

  (where *'ProfileName'* is the name of your MAPI profile.)

  The mailProfile setting is used to customize the Work Center's external mail capabilities. This mail profile is the name of a MAPI profile that is one of the local profiles listed when the Properties form or the Outlook or Exchange icon is displayed. If you do not set up the profile name, you are prompted for a profile when you open the Employee Work Center.

Benefits of Using an SMTP Server

The benefits of using an SMTP server are that:

- You can separate mail functions along client/server lines, which facilitate 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, not just OneWorld. However, external users must be defined in Address Book.

Creating Workflow Processes

You can take any business idea and translate it into a workflow process using Enterprise Workflow Management. 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 your existing business practices or processes that used to involve some kind of paper trail.

Workflow processes contain activities. Activities 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 data structures to a process to pass information from one activity to the next.

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

This section describes how to create workflow processes using Process Master, P98800.

This section describes the following:

- ❑ Creating a workflow process

- ❑ Understanding distribution lists

- ❑ Working with distribution lists

- ❑ Working with recipient rules

- ❑ Resequencing activities

- ❑ Activating or deactivating a workflow process

- ❑ Attaching a process to an application

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 certain subsets of activities common to multiple processes or that recur within a process.

For example, you might have a process that updates a customer's credit limit, sends messages to the parties involved that the customer's credit limit has been 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 would any other process.

To create a workflow process, complete the following tasks:

- ❑ Understanding key and additional data

- ❑ Naming a workflow process

- ❑ Specifying key data and additional data

- ❑ Adding activities to a process

- ❑ Adding activity conditions

- ❑ Joining activities

Understanding Key Data and Additional Data

A Workflow process requires two data structures, referred to hereafter as key data and additional data.

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

Additional data contains all the data that the process (and any activity within that process) needs to complete the process flow. The Workflow system 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 additional data are stored in the Process Instance table (F98860).

Workflow Key Data and Additional Data Naming Conventions

Name key data and additional data the same, except for the last character. Both begin with WF, and use the format WF*xxxxyyy*A or WF*xxxxyyy*B.

WF = indicates a key or additional data selection

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

yyy = a sequential number

A = identifies key data

B = identifies additional data

Example: Key Data and Additional Data

Define both the key data and the additional data on Workflow Revisions 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's record 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.
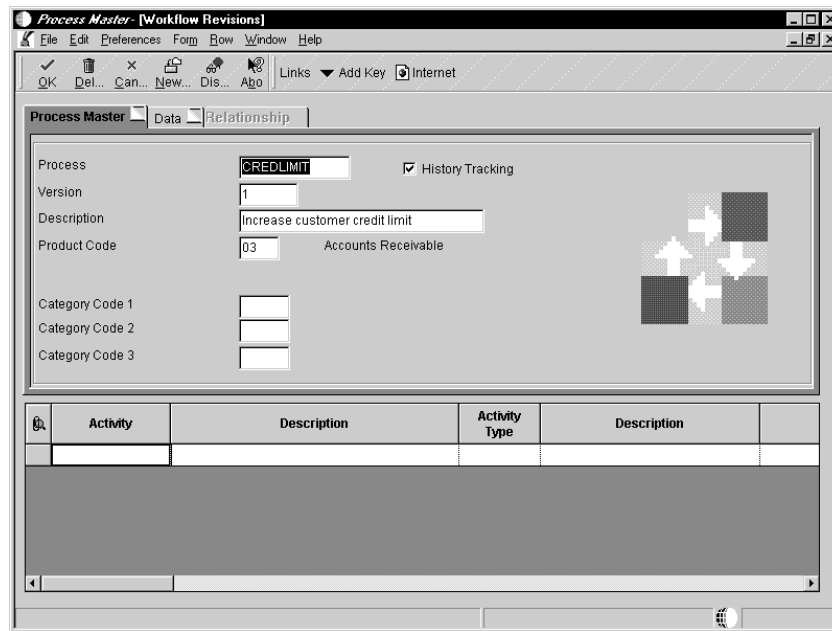
You must also provide up to a 32-character description that indicates the purpose of the Workflow process.

▶ **To name a workflow process**

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

1. On Work With Processes, click Add.

   The system displays Workflow Revisions.

2. On the Process Master tab, complete the following fields:
   - Process

     Name the process using the Workflow naming standard described above.

   - Version
   - Description
   - Product Code
   - Category Code

Category codes help distinguish one process from another.

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

When a Workflow process is started, audit records are only saved in the instance tables if you specify that you want to log the progress for the process. If you leave this option off, no audit records will be written for the process.

| Field	Explanation
Process ID	The unique identifier for a process. If no value is entered, a next number is assigned. Once assigned, the value cannot be changed.
Process Version	A number from 1 to 99999 that identifies a unique version of a workflow process.
Workflow Process Description	The description of the Workflow process.
Product Code/Reporting	A code that designates the system number for reporting and jargon purposes. See UDC 98/SY.
Process Category Code 1	One of three codes to be used to categorize workflow processes.
History Tracking - Next Process Instance	The next availble unique instance for the process. When a workflow process is started, audit records can be written to the instance tables to allow for analysis of the process activity. If you want to track history for this process, choosing this option will create instance records.

Specifying Key Data and Additional Data

Once you have added and named a new workflow process, you must specify key and additional data on the Data tab. If key and additional data do not exist for your new workflow, then you can easily define new key and additional data using the Data tab. You can also modify existing key and additional data on the Data tab.

▶ **To specify key data and additional data**

On Workflow Revisions

1. Click on the Data tab.
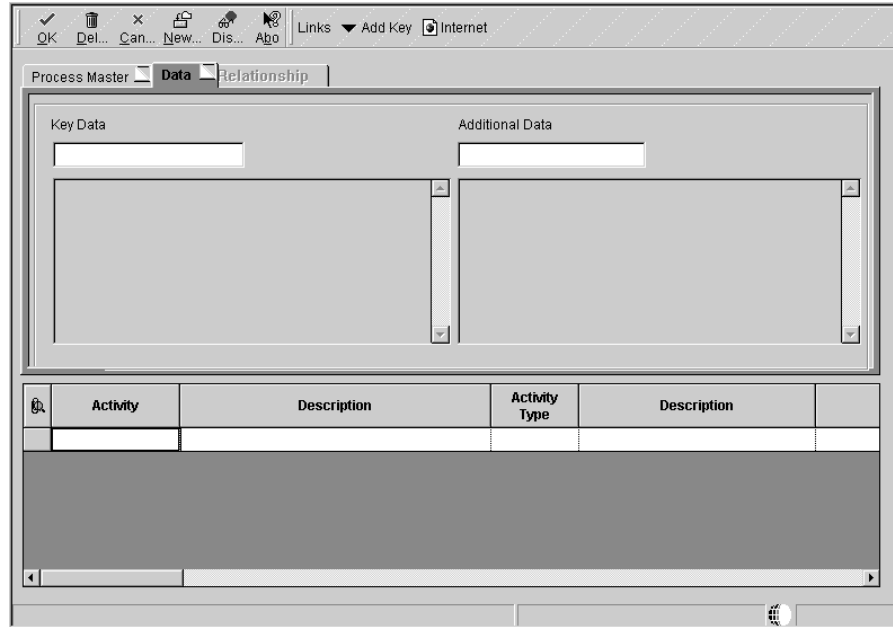
2. To use existing key data and additional data, complete the following fields:

    • Key Data

      Enter the key data name that you want to attach to the process. You can use the visual assist button to make your choice.

    • Additional Data

      Enter the appropriate additional data that you want to attach to the process. You can use the visual assist button to make your choice.

      After you have completed the Key Data and Additional Data fields, you are ready to add activities. See *Adding Activities to a Process*.

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

4. On Add Key Data or Add Additional Data, complete the following fields:

- Data Name

  The system automatically names the key data or additional data using the appropriate naming convention.

  If the name that the system attempts to assign already exists, then the Key Data and Additional Data fields will be blank and you must provide another name.

- Description
- Product Code
- Data Use
- SAR Number

5. Click OK.
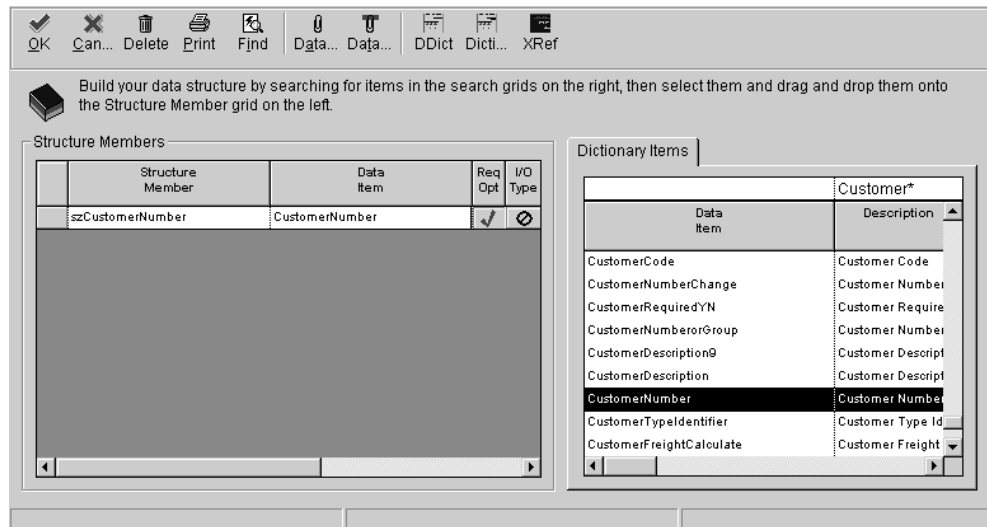
6. On Data Structure, in the list of Dictionary Items, find the data dictionary items you want to include in the key data or additional data, and drag them to the Name column on the left.

    Tip: You might want to rename a data item for a key or additional data to something more meaningful after you drag it to the column on the left. To do so, click the data item and type the new name.

7. 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 will appear blank. See *Adding Activities to a Process*.

Field	Explanation
Process Key Data Structure	A process can be keyed by one or more data items from a Workflow activity. To identify this key data to the system, you must create a data structure that contains these items and attach it to the process as the primary data structure. For example, the primary data structure of a credit limit revisions process would be the address book number of the customer whose credit limit was changed.

Field	Explanation
Workflow Process Data Structure	Activities within a Workflow process often evaluate or use data passed from other activities. To pass data between activities, you must create a data structure that contains the data items that you want to be evaluated, and attach that data structure to the process. For example, consider an activity within the credit limit revisions process. As the process runs, the activity uses the old and new credit limit values to determine to whom to send the approval messages.

Adding Activities to a Process

Workflow activities can assign tasks to a Workflow participant, send messages to another participant, initiate interactive or batch applications, halt a process, run a program, run a subprocess, or initiate a business function that manipulates data in a database. You use Workflow Revisions to add the various types of activities that you want to be executed when the process starts.

You can define activity conditions that determine when a particular activity will be invoked. When you finish adding activities and activity conditions, you can resequence the activities and change their relationships, if necessary, using Revise Relationships. See *Resequencing Activities* for more information. You can also route messages through activity conditions.

You can also join activities together, which controls the sequence in which the activities are executed.

This chapter describes the following tasks:

- ❑ Adding a Function activity

- ❑ Adding a Run Executable activity

- ❑ Adding a Batch Application activity

- ❑ Adding a Recipient Condition

- ❑ Adding a Message activity

- ❑ Adding a Halt Process activity

- ❑ Adding an Interactive Application activity

- ❑ Adding a Process activity

Before You Begin

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

Adding a Function Activity

A Function activity attaches a business function for special logic processing, including any business functions written in Business Function Event Rules or C programming language. 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.
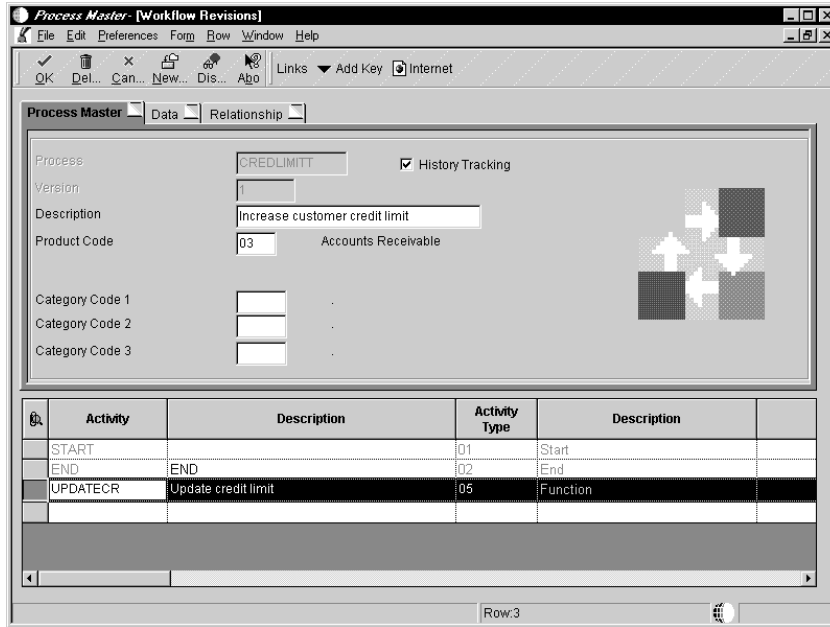
Before You Begin

❑ Create a business function if one does not exist. See *Business Functions* in the *OneWorld Development Tools Guide.*

▶ **To add a Function activity**

On Workflow Revisions

1. In the detail area, complete the following fields:

   • Activity

   • Description

2. Enter 05 in Activity Type for a Function activity.

3. Choose the row and choose Event Rules Definition from the Row menu.
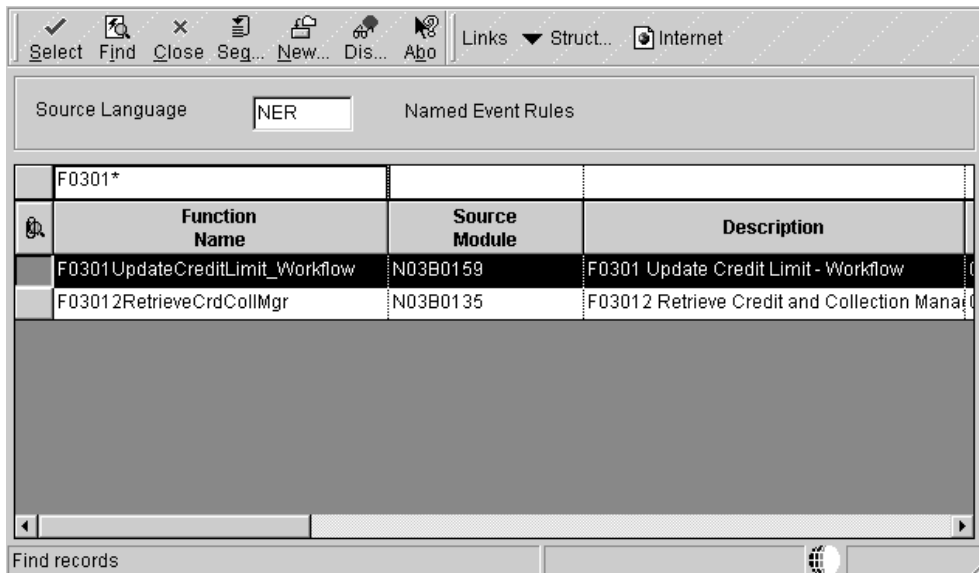
4. On Business Function Search, find and choose the business function you want to attach to this activity.

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 into the business function the corresponding data items from the Workflow key and additional data selections.

In this example, the data items that are passed into the business function will update the customer's credit limit to the new credit limit.
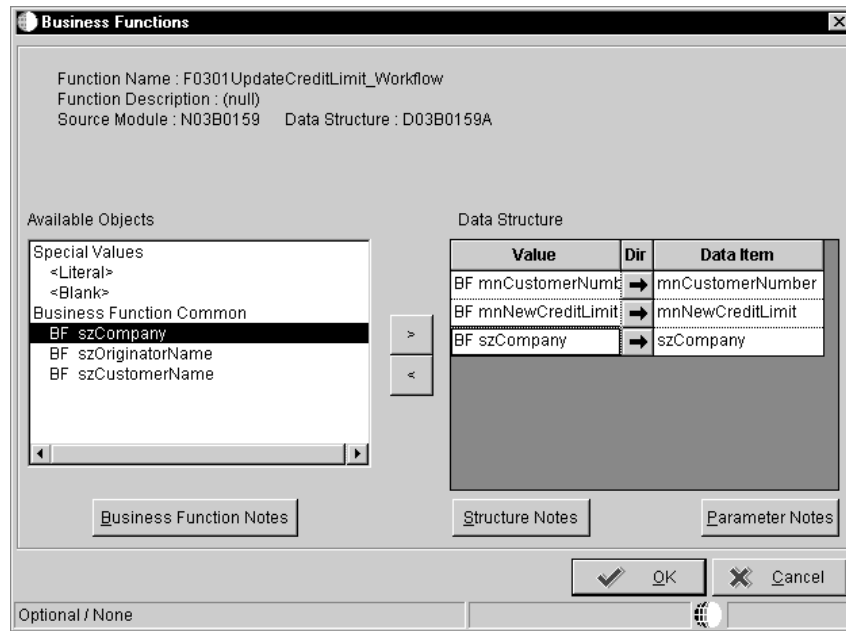
6. Click OK.

7. The system returns to Workflow Revisions.

Adding a Run Executable Activity

A Run Executable activity launches an executable program that you specify, such as a word processing application or spreadsheet.

▶ **To add a Run Executable activity**

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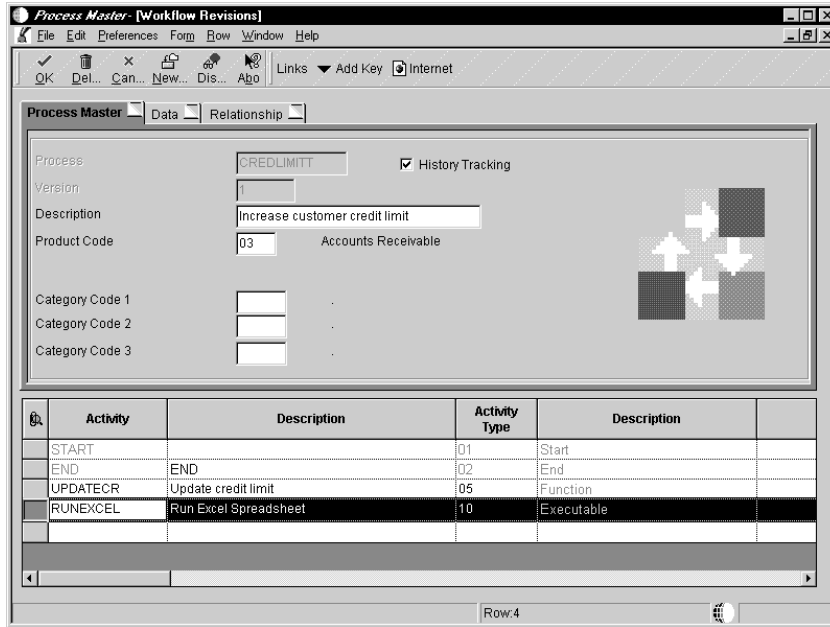
1. In the detail area, complete the following fields:

    - Activity

    - Description

2. Enter 10 in Activity Type for an executable activity.

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

    The system displays Run Executable Activity Revisions.

4. On the Function Selection tab, double-click the Messaging folder, 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.

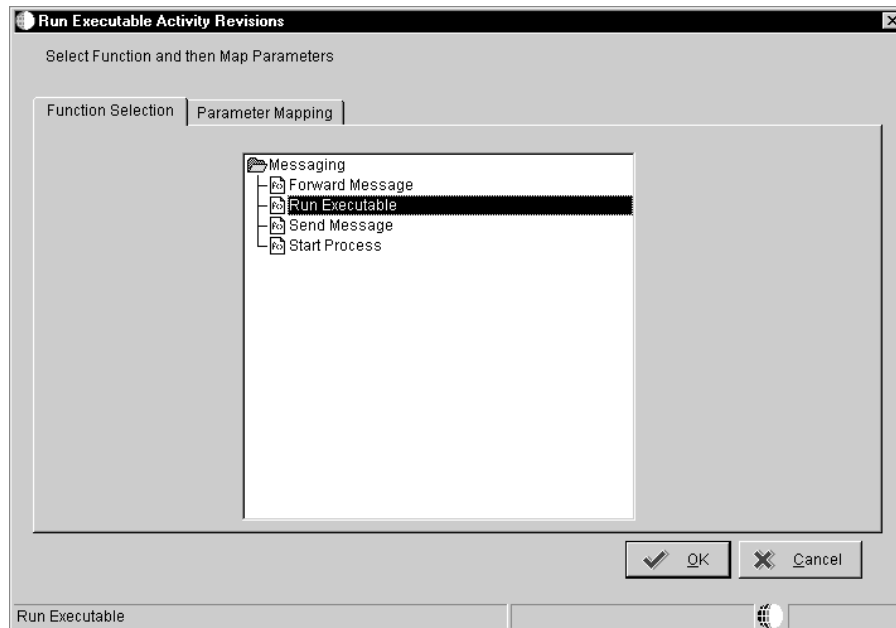8. On Single Value, enter the location of the directory to which you want to map and click OK.

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 OneWorld batch application, such as a report or batch process. For example, you can create an activity that runs the General Ledger Post report or the Leadtime Rollup batch process.

▶ **To add a Batch Application activity**
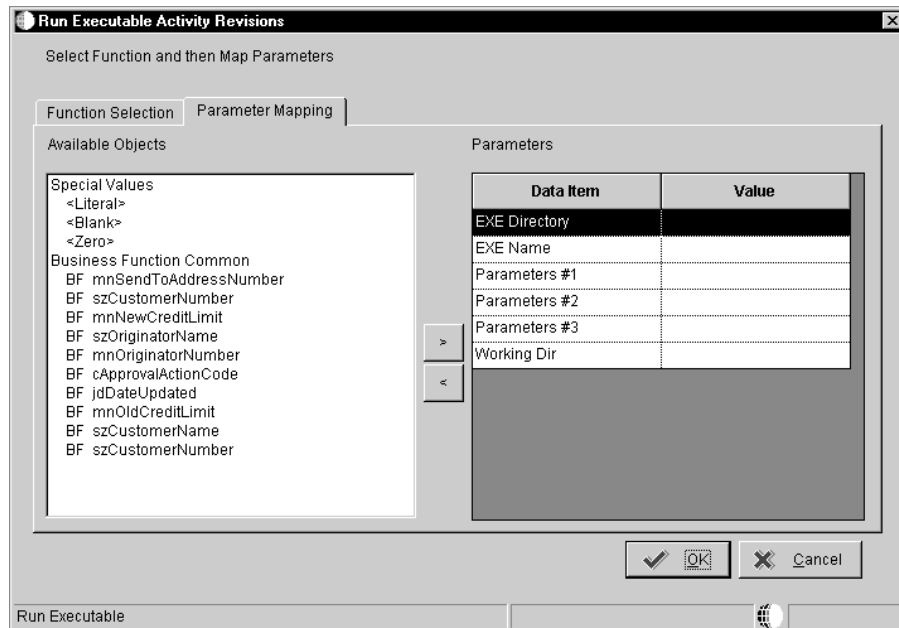
On Workflow Revisions
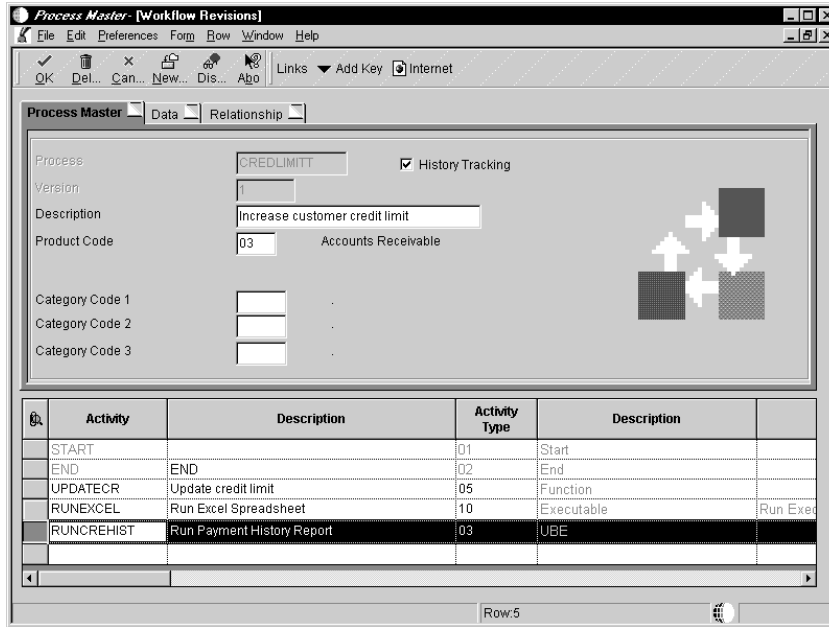
1. In the detail area, complete the following fields:

    -   Activity

    -   Description

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

3. Choose the activity you added and then choose Event Rules Definition from the Row menu.
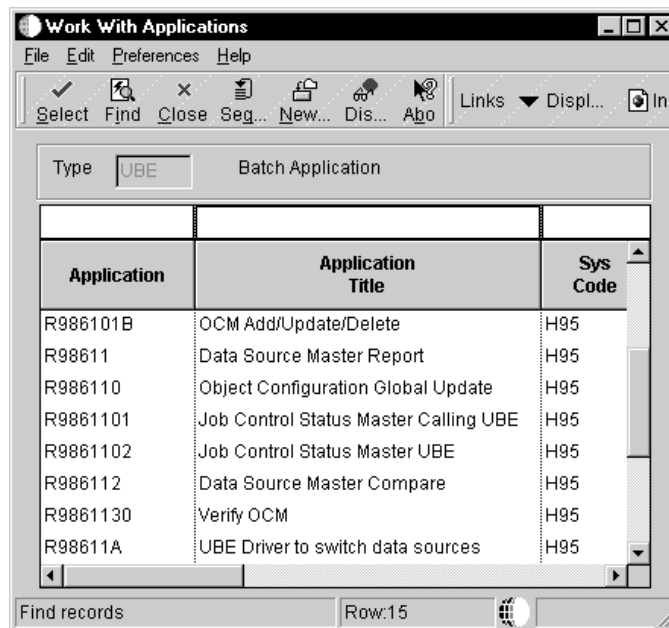
4. On Work With Batch Applications, find the batch process or report you want to attach to the activity and click Select.
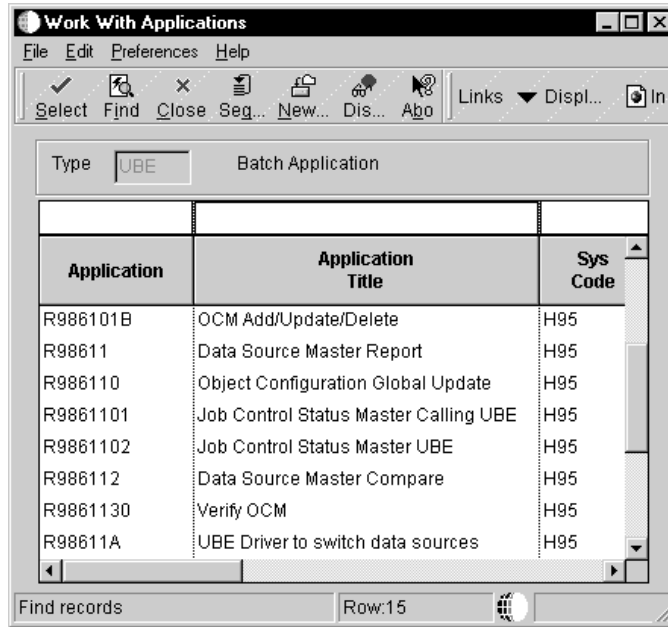
5. On Work With Versions, choose the version of the batch process or report you want to use and click Select.
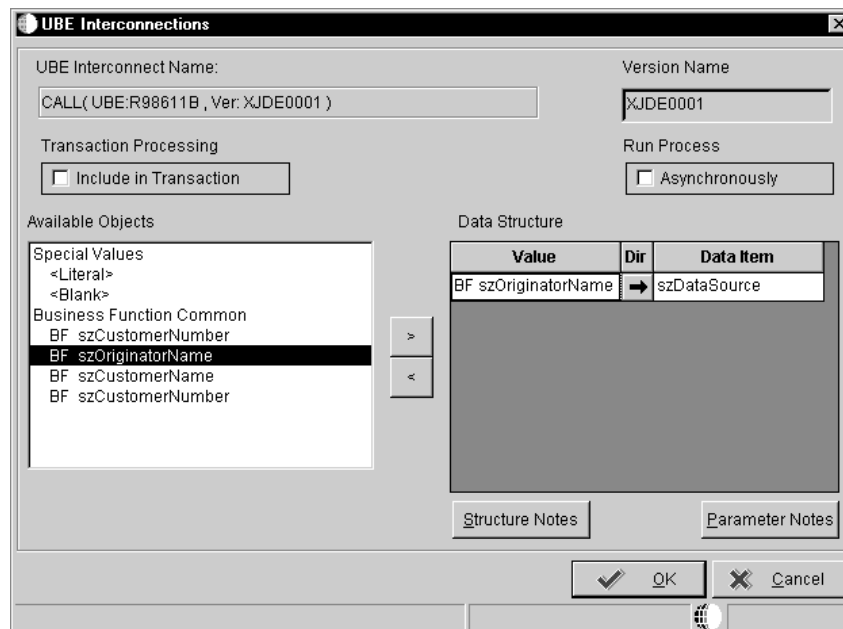
6. On UBE Interconnections, in the Available Objects list, choose the object that you want to pass. Click the > button to add the object to the Data Structure-Value column.

NOTE: You may not need to pass data in your Workflow process. Whether or not you pass data in a process or receive data from a process, the Batch Application (UBE) activity must have a report data structure to call it in Workflow.

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 ⊘ and click OK.

See Also

- See *Creating a Report Interconnect* in the *OneWorld Development Tools Guide* for more information about report interconnections.

Adding a Recipient Condition

Create a recipient condition that may be used for escalation and when you define recipient rules. You can add a recipient condition at any point when you are creating a Workflow process. Use the Workflow Revisions form to add a recipient condition.

▶ **To add a recipient condition**

1. On Workflow Revisions, complete the following fields:
   - Activity
   - Description
2. Enter 09 in Activity Type for Recipient Condition.
3. Choose the Recipient Condition you added and then choose Event Rules Definition from the Row menu.

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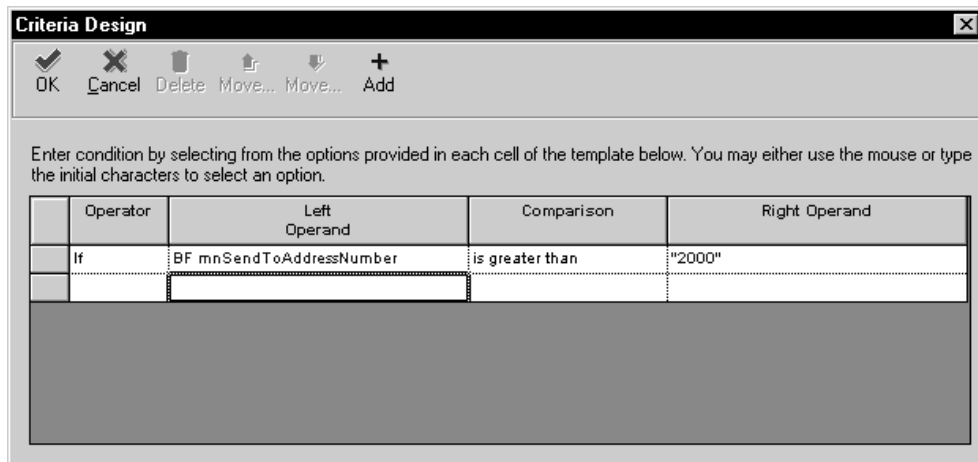
See Also

- *To add a Message activity with escalation* in this guide
- *Adding recipient rules* in this guide

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 or data, such as the Generic Approval form (P98805). They can also contain a message template. Message templates (or DD 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 through Workflow Messages in the Data Dictionary. See *Setting Up Workflow Message Templates* for more information.

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

If you add escalation, you must also add escalation rules. These rules are similar to recipient rules because they determine to whom or to which distribution list an escalated message will be sent. The difference is that 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 will be sent. You also need to activate the Escalation Monitor (R98810), which is a batch process that checks for message activities that contain escalation and then 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*.

Complete the following tasks:

- To add a message activity

- To add a message activity with escalation

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 from the Data Dictionary (P92002). See *Setting up Workflow Message Templates* for information about how to enter a new message template.

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

- To add a recipient rule to a message activity, choose the activity and click Recipient Rules from the Form menu. See *Working with Recipient Rules.*

  If you want to attach an existing recipient rule to this activity 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.

▶ **To add a Message activity**

On Workflow Revisions

1. In the detail area, complete the following fields:

   - Activity

   - Description

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

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

   The system displays Forward Message Activity Revisions.
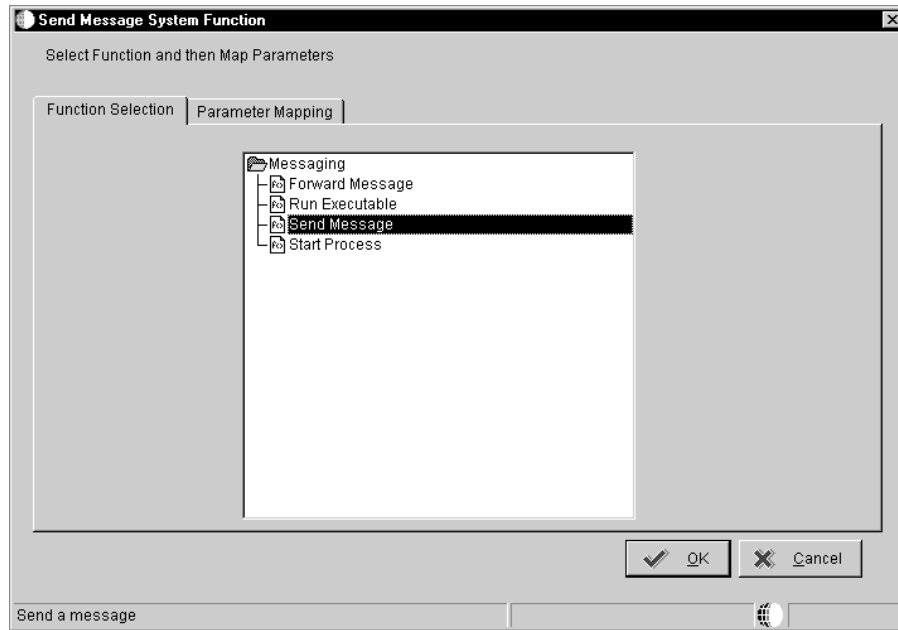
4. On Forward Message Activity Revisions, double-click the Messaging folder on the Function Selection tab and choose Send Message.

5. Click the Parameter Mapping tab.
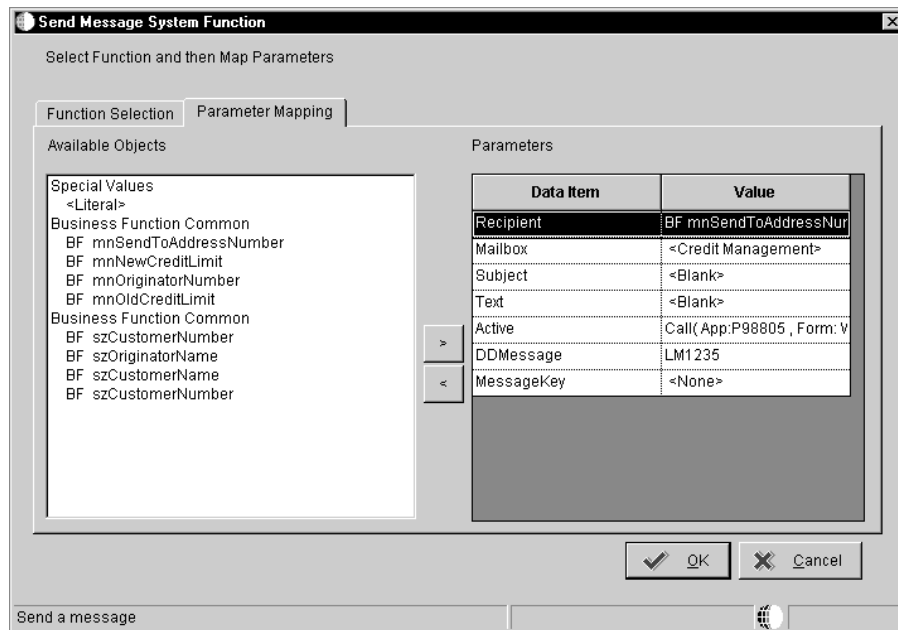
6. On Parameter Mapping:

- Indicate to whom the message will be sent by choosing the Recipient data item and mapping it to 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 for the distribution list, the message will only be sent to the distribution list address book number and not to the members contained within it.

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.

- Indicate to which mailbox the message will be sent by choosing the Mailbox data item, 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.

- If you want to include a subject line for the message, for example, if you are attaching an Active Message to the activity, 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 an active 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.

- If you want to add a message that contains static text (that is, text that does not change), 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>.

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

- 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.
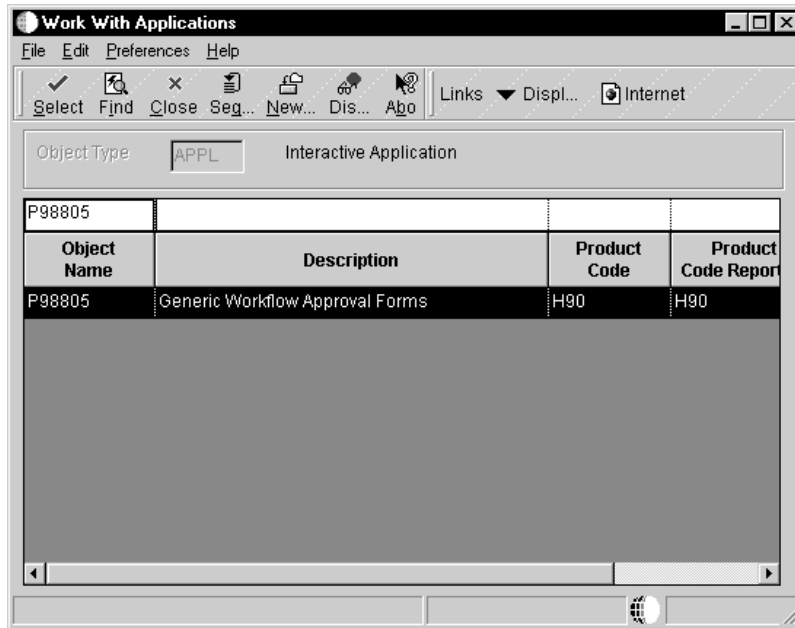
In the query by example row, enter the application you want to include as a shortcut in the message and click Find.

For example, if you want to use a Generic message approval form, enter P98805 and click OK.
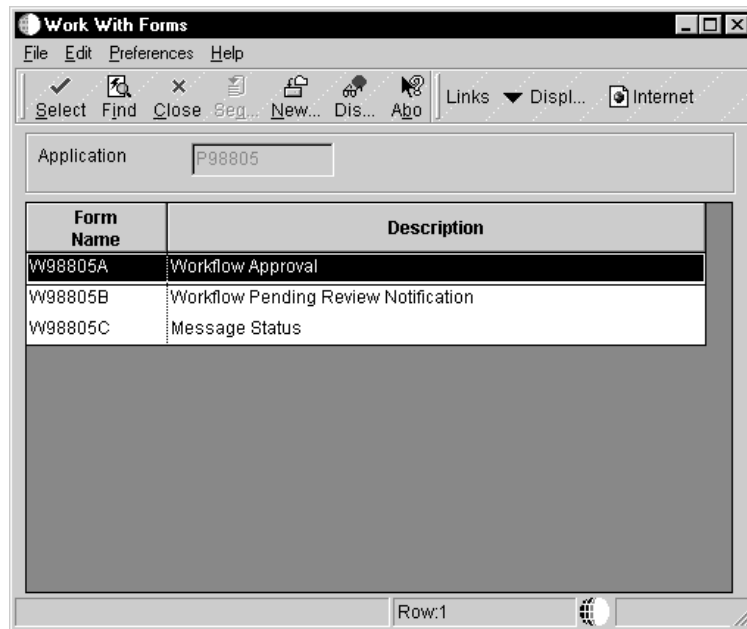
On Work With Forms, select the form you want to use and click OK.

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

The system displays Form Interconnections.

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

See *Understanding Form Interconnections* in the *OneWorld Development Tools Guide* for more information about form interconnections.

The system returns to Forward Message Activity Revisions.

- If you want to attach a template message, choose the DD Message data item and choose <Define Message> from the available objects.

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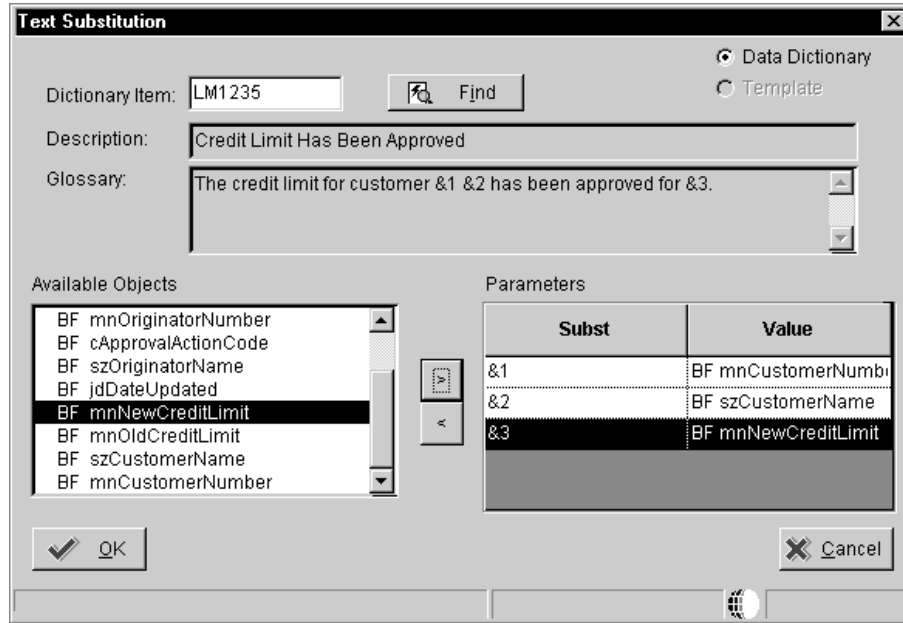
On Text Substitution, enter the name of the message you want to use in the Dictionary Item field and click Find.

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 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.

- 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**

On Workflow Revisions

1. In the detail area, complete the following fields:
   - Activity

- Description

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

3. Enter Y in the Escalation field.

4. Choose the activity you are adding, and then choose Event Rules from the Form menu to define the escalation message.

   The system displays Send Message System Function.
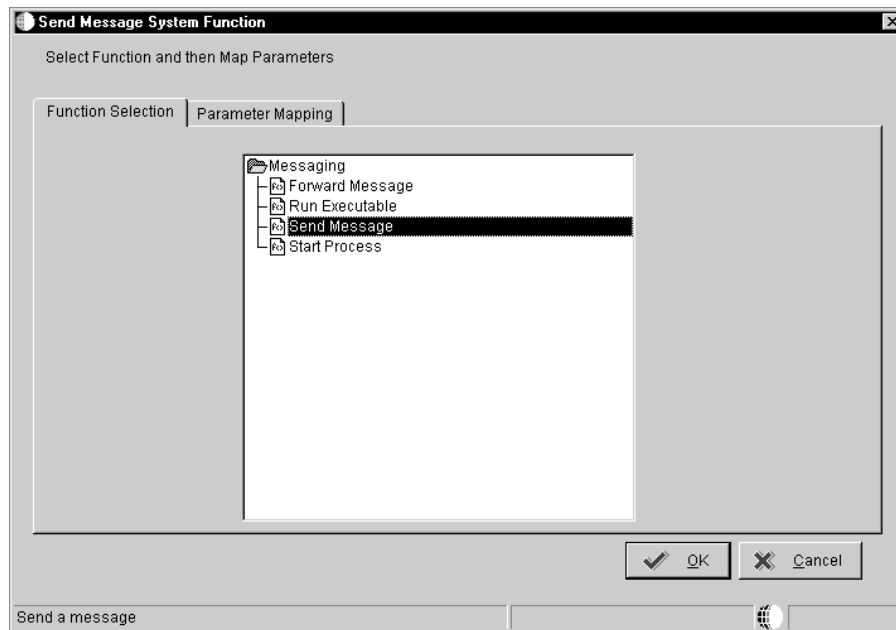
5. On the Function Selection tab, double-click the Messaging folder.

6. Choose the Send Message option.

7. Click the Parameter Mapping tab.

8. Map the parameters for the message as necessary and click OK.

   For example, you might want to attach another message to the original message. The attached message might indicate that the original message is being forwarded to another user because the original recipient did not respond after a certain period of time.
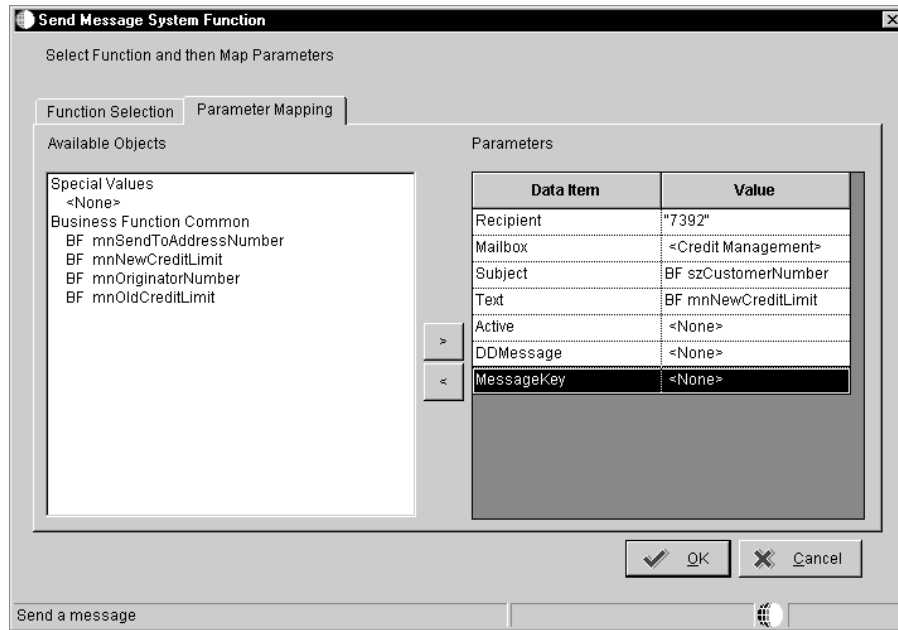
NOTE: You can edit escalation information after you have added it to a Message activity by clicking the Revise Escalation button in the Row exit bar on the Workflow Revisions form. Remember that you cannot edit escalation information, or anything else within a process, if it has been activated or if instances of the process exist.

After you map the parameters and click OK, you are returned to the Workflow Revisions form.

9. On Workflow Revisions, click OK.

The system displays the Escalation Rules Form.
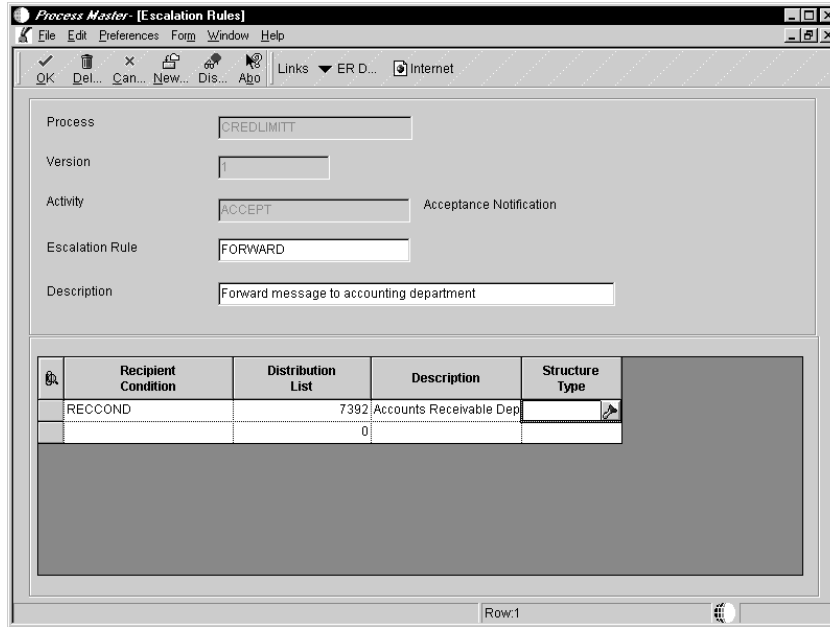
10. On Escalation Rules, complete the following fields:

- Escalation Rule

  Enter a unique name for the escalation rule.

- Description
- Recipient Condition

  You can specify a recipient condition to an escalation rule. The recipient condition must be added as an activity type 09. See *Adding a Recipient Condition*.

- 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.

11. If you want to add recipient rules to the activity, on Workflow Revisions, choose Recipient Rules from the Form menu and follow the steps as described in *Working with Recipient Rules*.

Adding a Halt Process Activity

A Halt Process activity stops the process and waits for a period of time before continuing the process.

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 need to happen as soon as the human resources department knows that this employee is leaving the company. The Benefits department will need to know that this employee should no longer have insurance coverage after a certain date, and the Information Technology department might need to know that computer and phone service for that individual needs to 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 will occur 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 (assuming that the Check for Expired Activities batch process is run on a regular basis), and the 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 should also run the Escalation Monitor (Check for Expired Activities batch process) on a regular basis, either manually or through the Scheduler. If you do not run the Escalation Monitor periodically, the process will sit in a suspended state until you restart it.

▶ **To add a Halt Process activity**

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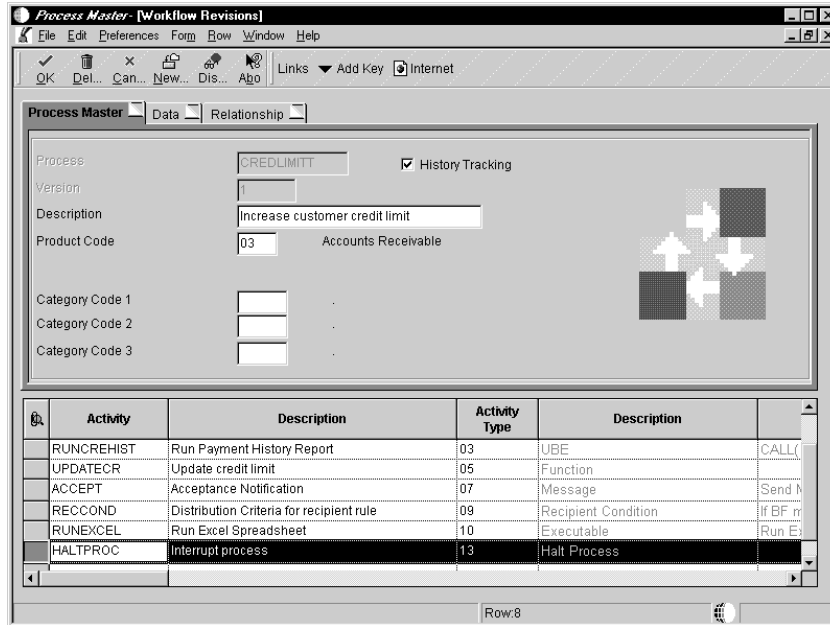
1. In the detail area, complete the following fields:

   - Activity

   - Description

2. Enter 13 in Activity Type 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.

   For example, if you enter 8 hours and 30 minutes in the Expiration Hours and Minutes fields, then 8 hours and 30 minutes from when the activity within the process is started, the system expires the halted condition moves to the next activity.

4. Click OK.

See Also

- *Activating the Escalation Monitor* in this guide.

Adding an Interactive Application Activity

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

Application activities cannot be run on the server.

▶ **To add an Application activity**

On Workflow Revisions

1. In the detail area, complete the following fields:

    - Activity

    - Description

2. Enter 04 in Activity Type for an Application activity.

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

    The system displays Work With Applications.
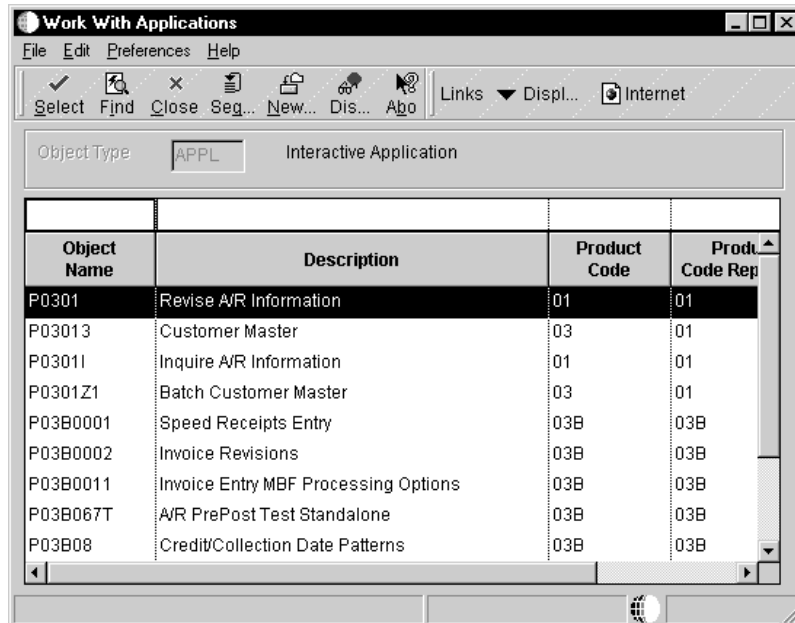
4. On Work With Applications, find and choose the application that you want the activity to invoke and click Select.

    The system displays Work With Forms.
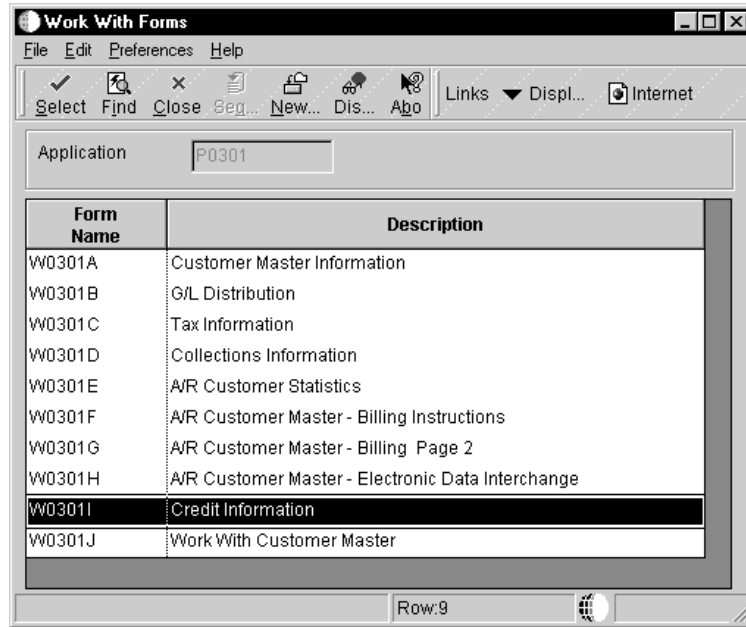
5. On Work With Forms, find and choose the form that you want to appear when the application launches and click Select.

The system displays Form Interconnections.
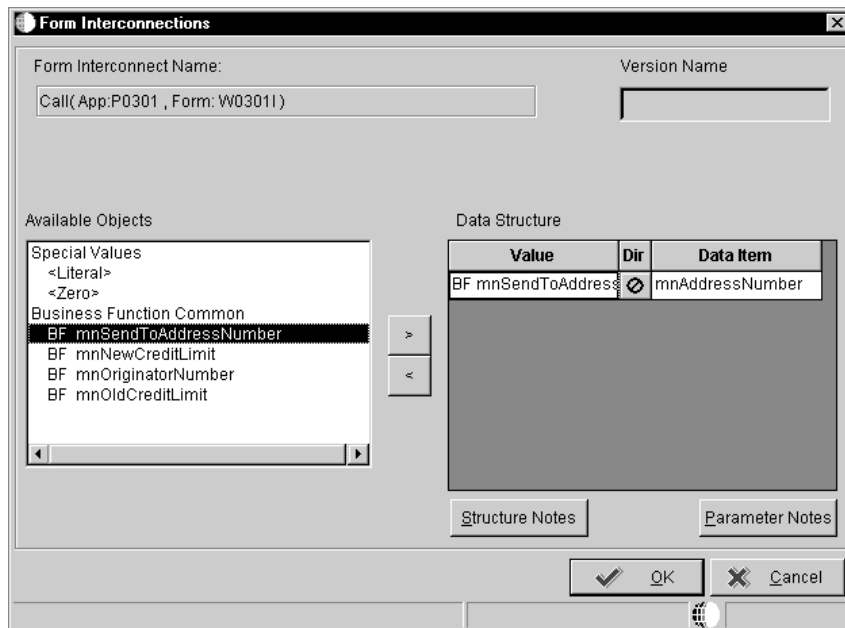
6. From the Available Objects list, choose the data item from the primary or attribute data structures that you want to pass to the form that you are calling. Click the > button to add the object to the Data Structure-Value column.

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

8. If you do not want data to pass between forms, set all Direction values to $\varnothing$.

9. 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 merely attaching an existing process to the main process.

▶ **To add a Process Activity**

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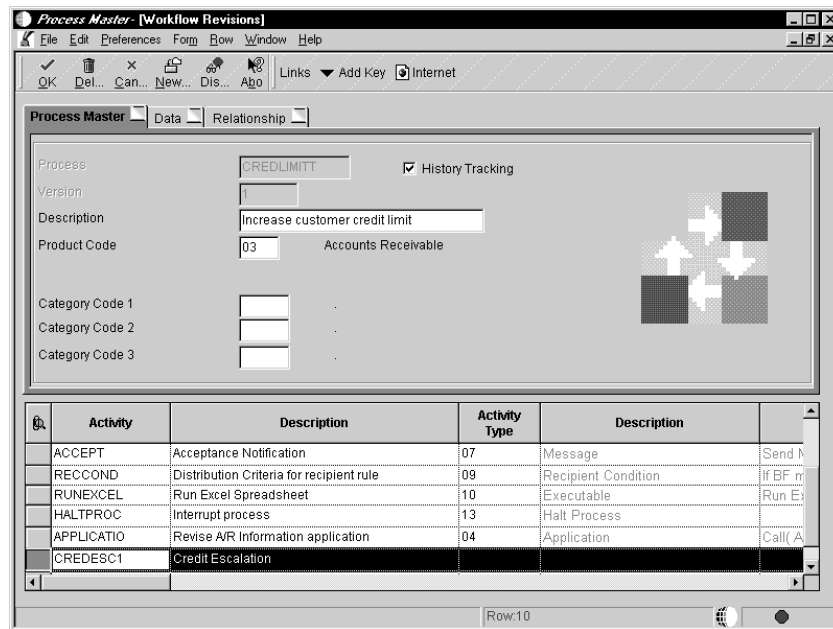
1. In the detail area, complete the following fields:

    - Activity

    - Description

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

3. Choose the activity you added and then choose Event Rules Definition from the Row menu.
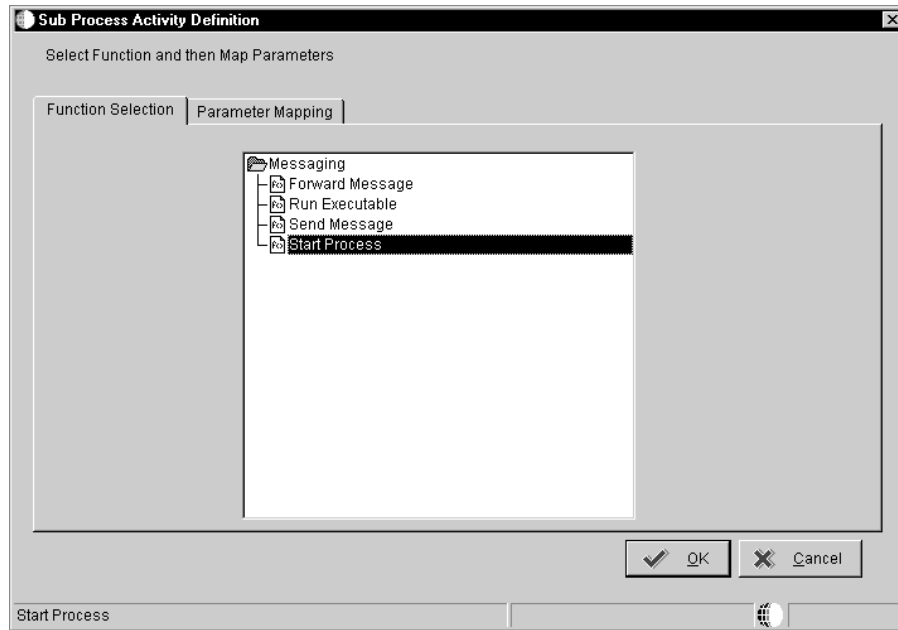
4. On Sub Process Activity Definition choose Start Process on the Function Selection tab.

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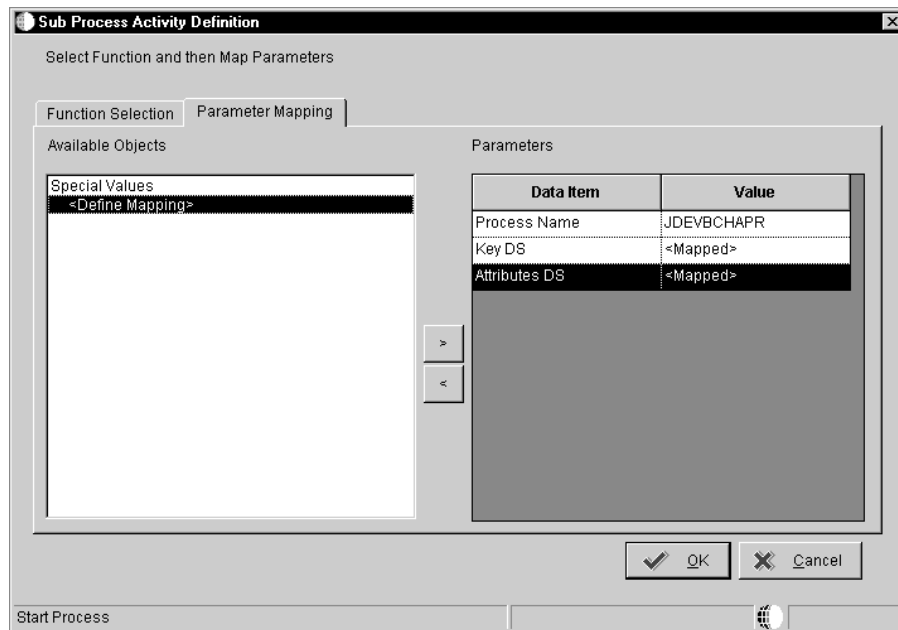
6. Map the available objects to the data item parameters as necessary and click OK.

Adding Activity Conditions

Activity Conditions are user-defined rules that determine which activity will execute and what happens when that activity executes. For example, an activity condition called "IFAPPROVE" might trigger the system to invoke the activity that will update the database if a user approves a message, then invokes the activity that sends a message notifying the originator that the message was approved. An activity condition called "IFREJECT" would trigger the system to invoke the activity that sends a message to the originator notifying him that the message was rejected.

You use Criteria Design to add logic to an activity condition. The logic you add determines the condition under which the next activity will be executed.

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

▶ **To add an activity condition**

On Workflow Revisions
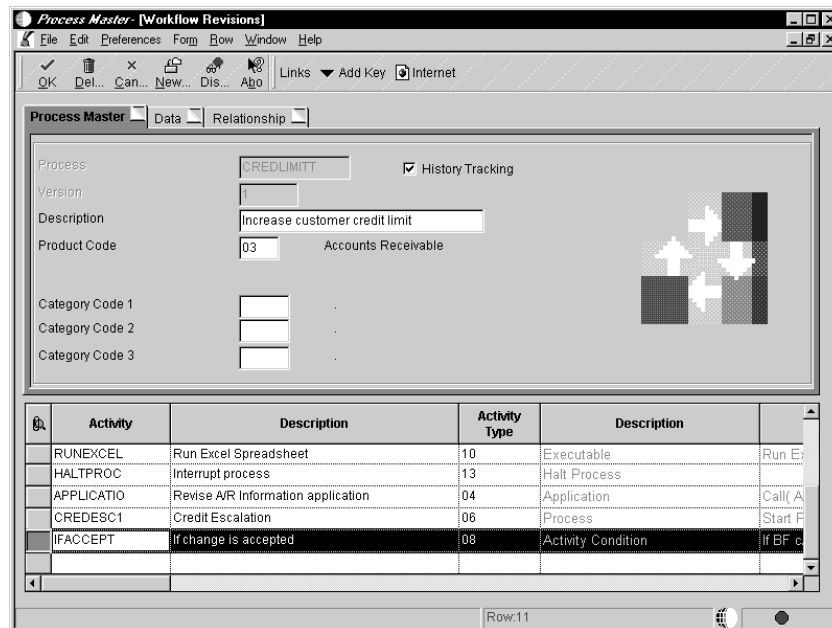
1. Complete the following fields:

    -   Activity

    -   Description

2. Enter 08 in Activity Type for Activity Condition

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

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

	Operator	Left Operand	Comparison	Right Operand
	If	BF cApprovalActionCode	is equal to	"a"
	And	BF mnOldCreditLimit	is greater than	"2,000"

(Criteria Design window with toolbar: OK, Cancel, Delete, Move..., Move..., Add)

Joining Activities

You join activities together when you want a certain group of activities to run simultaneously, and each activity is not dependant on the completion of the other activities in the group. The advantage to joining activities is that running multiple messages at the same time is faster than running the messages individually. To join messages you choose the "And Join" option for each of the Message activities.

You join activities together after you have defined them.

▶ **To join activities**

On Workflow Revisions

1. Choose an activity that you want to join to another activity.
2. Enter a Y in the following field:
   - And Join
3. Choose the next activity you want to join and repeat the task.
4. Click OK.

   The system automatically sequences this activity to any next activity you have added to the process. You can view the sequence of these activities through Revise Relationships.

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 by:

- 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 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 would first send the message to Group 1 (the first level in the list), then send it to Group 2, and send it to Group 3 last, because they are 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. Or, you can arrange distribution lists into a multiple-level structure. When you arrange a multiple-level structure, you can set up several parents, such as the president and all vice presidents within the company, then list the employees under each of those parents.

Threshold Values

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 attribute data structure to determine the routing.

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 would send 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.

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 the other two members might have threshold values of 25,000 USD. Group 2 contains two members who have threshold values of 25,000 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 25,000 USD will receive the message. Once they approve the increase, the message continues to the two members within Group 2 whose threshold value is also 25,000 USD.

See *Single-Level Distribution List Structure* for an illustration and further explanation of groups in conjunction with 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 will be deleted from their queues, and the activity will be marked as complete. For example, in a single-level structure, if someone such as Clerk 7101 responds to the message first, the message will be deleted from the other recipient's queues.
	See *Single-Level Distribution List Structure* in this chapter for an illustration of a single-level distribution list.
	First Response is normally used when you organize members of a distribution list into groups. For example, if you have organized members of a distribution list into groups such as Group 1, Group 2, and so on, and if First Response is checked, the members of Group 1 will receive the message first. Groups 2, 3, and so on will not receive the message unless no one in Group 1 responds first.
	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.
	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 are deleted from their queues.
Authorization Required	Indicates that if a member in the distribution list initiates a Workflow transaction (such as a salary increase for 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 will not be updated with that change unless his supervisor (Director #1) 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 can pass before a message is escalated to another recipient in the event that the original recipient does not answer the message.

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. That is, 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 will 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's 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 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 it.

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 will first be 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 will complete and the message will not be sent to the other groups. However, if all of these members approve (or accept) the message, it will be sent to managers #1 and #2 in Group 2 (members 7201 and 7202) for their approval because they are in the next highest group in the distribution list. Manager #3 and members in groups 4 and 5 (members 7203, 7301, 7301, 7401, 7402, and 7500) will 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 will be sent to the first group above the originator's group. So a message that is sent by 7202, and has a threshold value of 35,000, will first be 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 will the message activity complete because the next group (Group 4) does not meet the threshold value - Group 4's thresholds are all greater than 35,000.
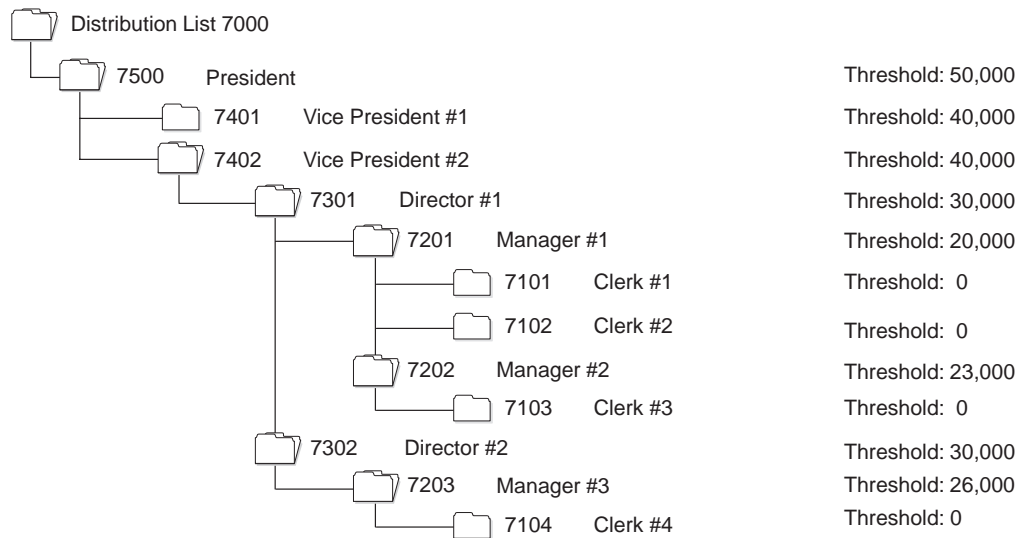
Multiple-Level Distribution List Structure

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 will be sent to all members beneath that parent.

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. So a message with a threshold value of 45,000 that is sent by 7102 (clerk 2) will first be sent to 7201 (clerk 1's manager). If the manager approves the message, then 7301, the director, will receive the message. After 7301 approves it, it will be sent to 7402. The message activity will 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 will complete.

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

Working with Distribution Lists

You set up distribution lists to group employees into categories for message routing purposes. In the Workflow system, 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 would use a multiple-level structure if you want messages to be sent to managers first. You would use a single-level structure if you want to categorize members of a distribution list into groups. The way you group the members of the list determines who should receive a Workflow message first. In other words, members of Group 1 will receive messages first, followed by Group 2, Group 3, and so on.

Complete one or more of the following tasks:

- Add a single-level distribution list

- Add a multiple-level distribution list

- View the distribution lists of which a child is a member

Before You Begin

❑ Make sure that all members you want to include in the distribution list have been entered into 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* in this guide for more information.

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

From Workflow Management Setup (G0241)

1. Choose Group Revisions.

2. On Work With Distribution Lists, find the distribution list to which you want to add members and click Add. Use the Structure Type field to narrow your search.

3. 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 attribute data structure. 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. So, if a customer's credit limit amount has been increased, the system would send 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 will 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

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

- Escalation Hours/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.

5. Enter the beginning and ending effective dates for each member of the distribution list in the following fields:

- Beginning Effective Date - Julian

- End Effective Date

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

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

- First Response

- Higher Level Override

- Authorization Required

7. Click OK.

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

On Work With Distribution Lists
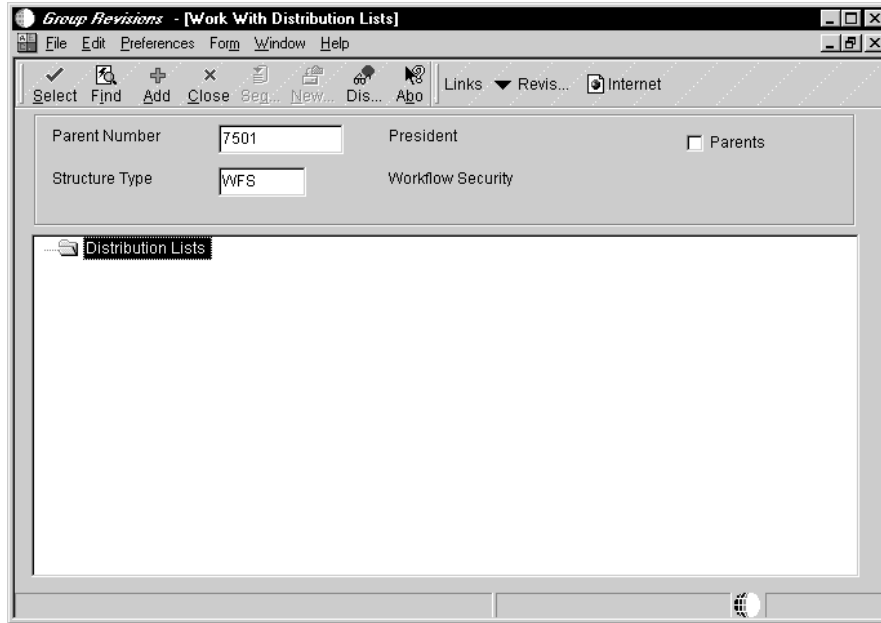
1. Find the parent within a distribution list to which you want to add a level.

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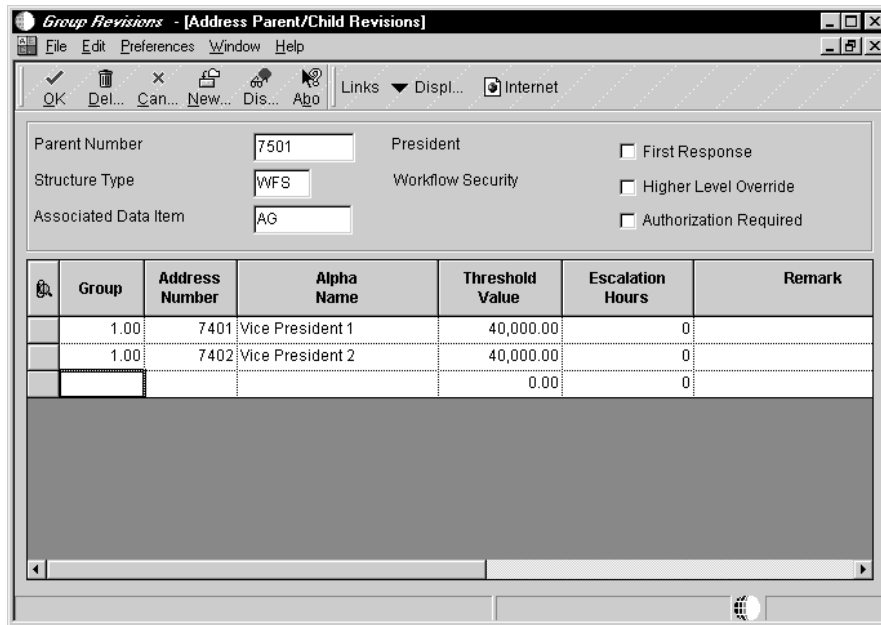
3. On Address Parent/Child Revisions, add members to the parent by following the steps described in adding a single-level distribution list, except that you should enter 1 in the Group field.

    You enter a 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 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, then enter the vice presidents.

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

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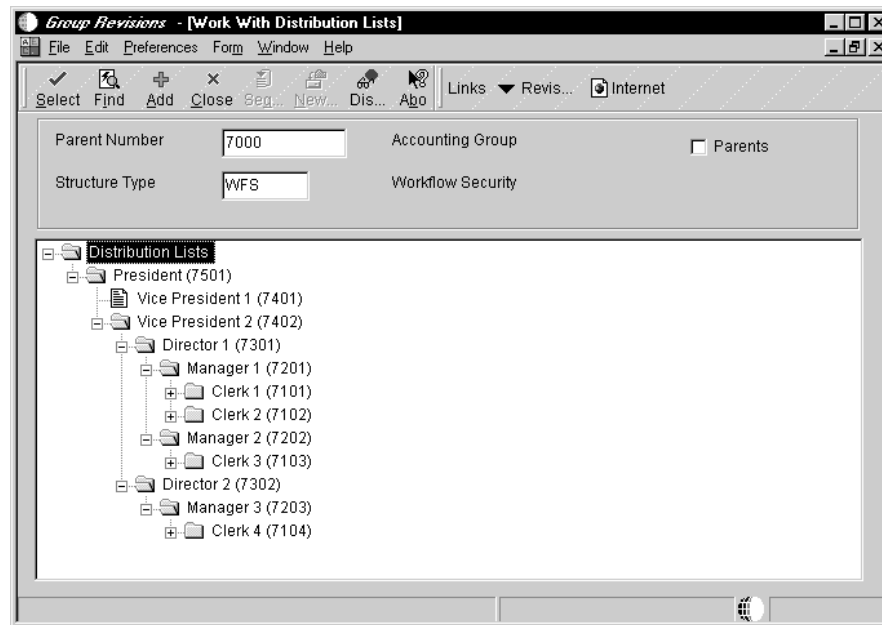
▶   **To view the distribution lists of which a child is a member**

On Work With Distribution Lists
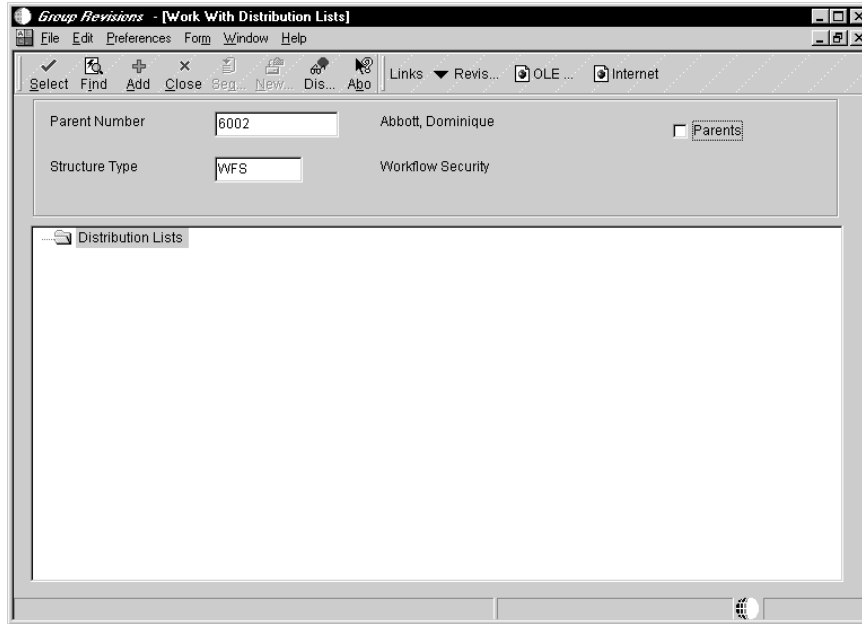
1. Complete the following fields:

    - Parent Number

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

    - Structure Type

2. Click the following option, 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.

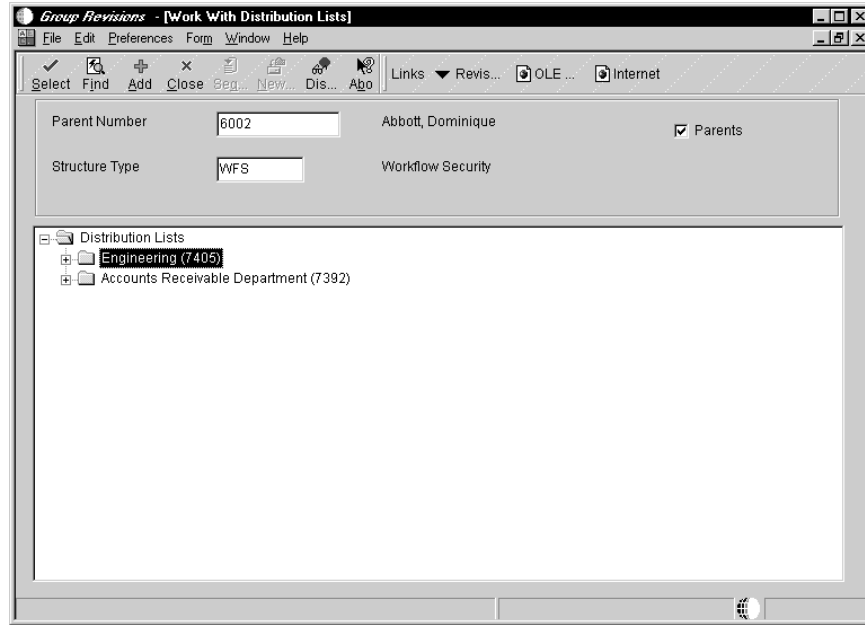| Field	Explanation
Parent Number	The Address Book number of the parent company. The system uses this number to associate a particular address with a parent company or location. For example: • Subsidiaries to parent companies • Branches to a home office • Job sites to a general contractor This address must exist in the Address Book Master table (F0101) for validation purposes. . . . . *Form-specific information* . . . . The Address Book number of the primary level in a hierarchy, or reporting relationship. A parent in one hierarchy can be a child in another hierarchy. A hierarchy can be organized by business unit, employee, or position. For example, you can create a hierarchy that shows the reporting relationships between employees and supervisors.
Structure Type	A user defined code (01/TS) that identifies a type of organizational structure with its own hierarchy in the Address Book system (for example, e-mail). When you create a parent/child relationship for a customer or supplier, the structure type must be blank. . . . . *Form-specific information* . . . . Identifies the type of distribution list, such as WFS for workflow, ORG for group, and EML for e-mail.
Associated Data Item	The data item used to retrieve the formatting information to use on the Threshold Value.

Field	Explanation
Threshold Value	The value used to determine if certain individuals within the distribution list should be included in the approval of a workflow activity. This can be any numeric field such as an amount, quantity, percentage, and so on.
First Response	If this option is turned on, it indicates that if a workflow message is sent to the members of a distribution list, that only one of them must respond. When that first response is received by the workflow system, the other messages to the other members of the group are canceled and the activity is marked as complete.
	If this option is turned off, all members of the group that the workflow message is sent to must respond before the activity can be considered complete.
Higher Level Override	If this option is turned on and a person in a higher level group manually approves a workflow transaction (via a workbench program), then all lower level groups will be marked as bypassed.
	If this option is turned off, then if a person in a higher level group manually approves the transaction, the action is logged, and all lower level groups are still required to approve the transaction.
Authorization Required	If this option is turned on and a person in the distribution list enters a workflow transaction that goes through the distribution list, the next higher person must be sent the message, even if the threshold has not been reached for the higher person.
	If this option is turned off, no higher person is required to see the message as long as it is below the threshold.

See Also

- *Working with Recipient Rules* for information about how recipient rules work.
- *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 will be sent. You add logic to a recipient rule that determines at what point a message will be routed to a certain distribution list or recipient. When you create message activities (for example, messages that a recipient might approve or reject), you can add recipient rules to them.

Complete the following tasks:

❑ Adding recipient rules

Recipient Rules and Recipient Conditions

A recipient condition contains criterion 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 may be defined distribution list and structure type.

See Also

- *Adding a Recipient Condition* in this guide
- *Working With Distribution Lists* in this guide

How Recipient Rules Work

Suppose 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 number as the criterion to determine where to send messages. For example, 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.

Criteria Design				
Operator	Left operand	Comparison	Right operand	
If	BF mnCustomerNumber	is equal to	"1-3001"	

You enter logic, as described above, 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 criterion 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 criterion evaluates to true and you have not entered a rule name in the Rule field on Recipient Rules, the structure type will be 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.

Following are examples of the three combinations of distribution lists and structure types that you can use when you set up a recipient rule.

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 you entered.

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 will receive the message.

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 you entered in the recipient rule of which the originator is a member. Using the structure type, it finds all the parents that the originator belongs to and then looks at the parents in that structure type to determine to whom the message will be 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 would be 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 will then be sent to 7402 (Vice President 2), and so on up the distribution list. The message will never be sent to a level below 7101, such as 7102 (Clerk 2) or 7202 (Manager 2).

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

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.
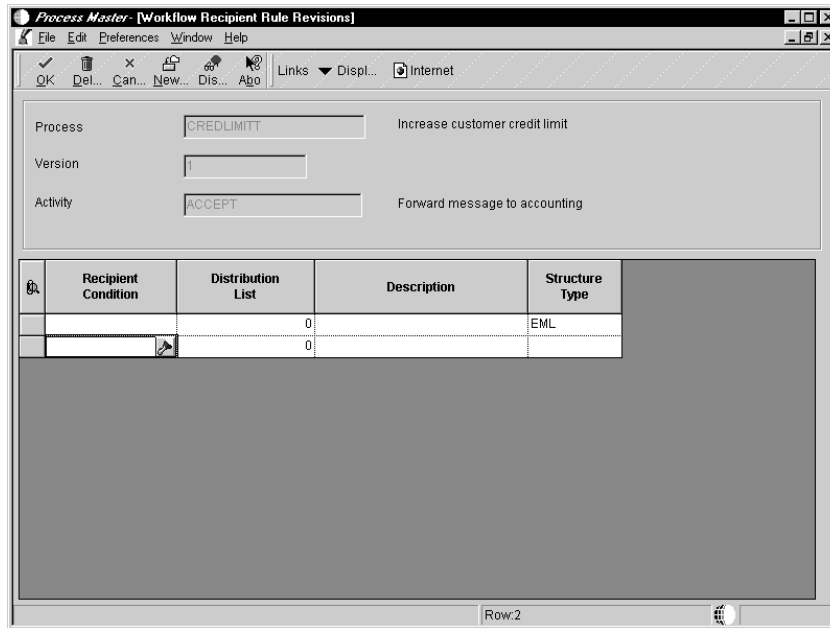
Typically, employees will not be attached to more than one structure type; for example, you would not have an an employee attached to both distribution list 7000, structure type EML, and distribution list 7384, structure type EML. However, you can have an employee attached to a structure type of ORG 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 that the value associated with the activity falls between. The distribution list and structure type combination 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 whose threshold values are 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 would use both a distribution list and structure type for the recipient rule.

Adding Recipient Rules

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

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 will override the parameter that you entered.

▶ **To add a recipient rule**

On Workflow Revisions

1. Choose the message the message activity to which you want to attach a recipient rule.

2. Choose Recipient Rules form the Form 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*.

Enter the name of the recipient condition 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 will be sent, based on the recipient condition. The system automatically populates the Description field for you.

- 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 use Revise Relationships to accomplish this task.

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**

From Workflow Revisions

1. Click the Relationship tab to view the current activity relationships.
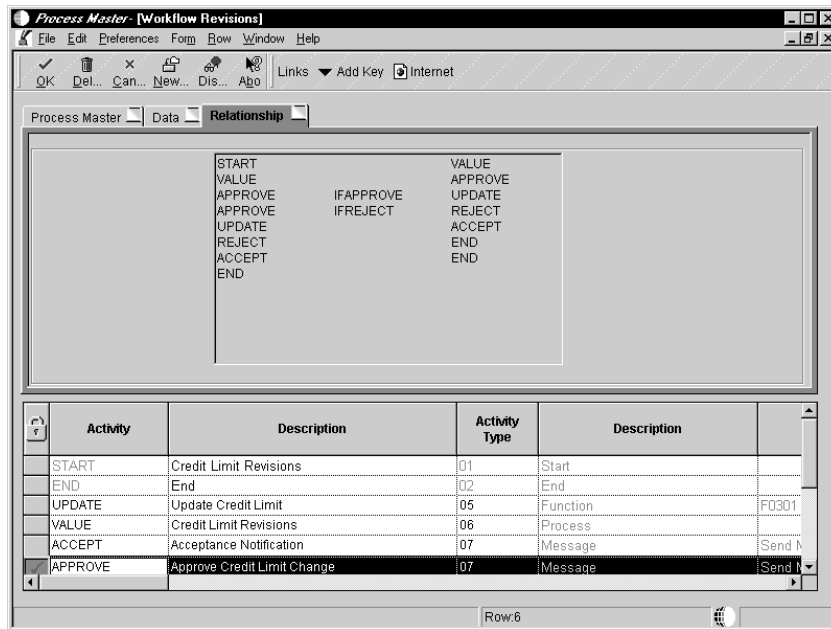
2. Choose Revise Relationship from the Form menu.

3. Resequence the activities in the order in which you want them to execute. For example, the next activity after Start might be Approve.
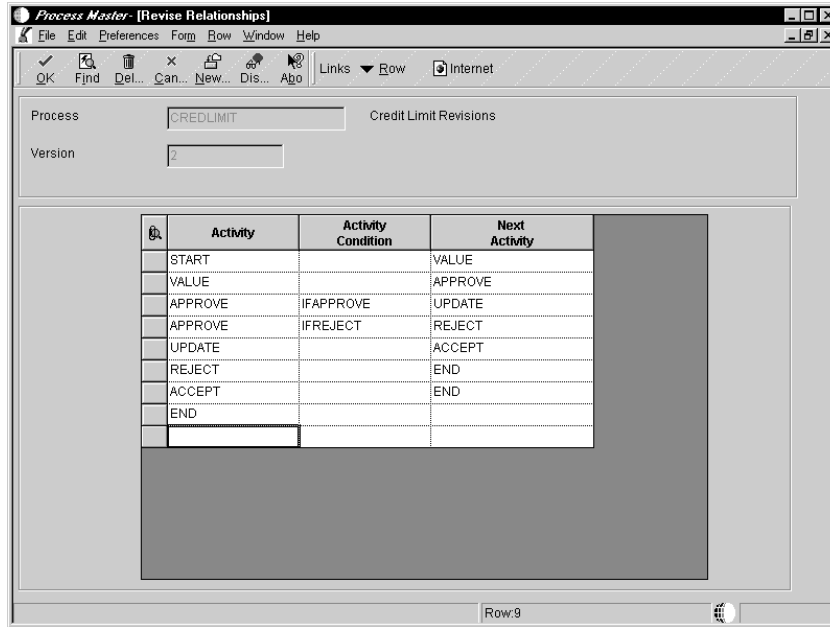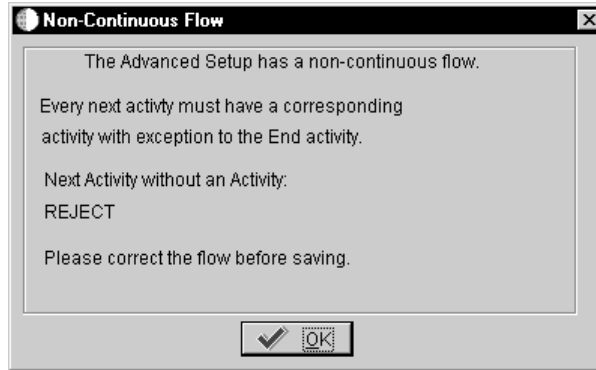
4. On the next row, in the Activity field, enter the same activity that appears in the Next Activity column in the row above this one. In this example you would enter Approve in the Activity field, then enter any activity conditions that apply to that activity in the Activity Conditions field, such as IFAPPROVE. The IFAPPROVE activity condition tells the system that if a user approves a message for a credit limit increase, the system will invoke 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 could 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 executed after the IFREJECT activity condition would be REJECT, which sends a message to the originator of the request, notifying him that the credit limit increase has been rejected.
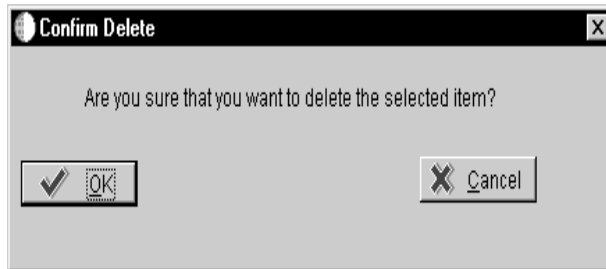
7. In the next row, in the Activity field, enter REJECT again. In the Next Activity field, add the next activity that would be invoked, such as END, which ends the flow of activities.

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.

```
┌─────────────────────────────────────────────────┐
│ ● Non-Continuous Flow                        [X] │
├─────────────────────────────────────────────────┤
│         The Advanced Setup has a non-continuous flow. │
│                                                   │
│    Every next activty must have a corresponding   │
│    activity with exception to the End activity.   │
│                                                   │
│     Next Activity without an Activity:            │
│     REJECT                                        │
│                                                   │
│     Please correct the flow before saving.        │
│                                                   │
│              ┌──────────────┐                     │
│              │  ✔  OK       │                     │
│              └──────────────┘                     │
└─────────────────────────────────────────────────┘
```

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 there is an activity that is not represented in the F98830 table, the system displays a message indicating that the flow is non-continuous.

If you do not use an existing activity, the system asks for confirmation that you want to delete that particular activity from Advanced Setup.

```
┌─────────────────────────────────────────────────┐
│ ● Confirm Delete                             [X] │
├─────────────────────────────────────────────────┤
│                                                   │
│      Are you sure that you want to delete the selected item? │
│                                                   │
│   ┌──────────────┐          ┌──────────────┐     │
│   │  ✔  OK       │          │  ✖  Cancel   │     │
│   └──────────────┘          └──────────────┘     │
└─────────────────────────────────────────────────┘
```

Field	Explanation

Activity	When used in the context of process rules, the following values apply:
	    Activity condition
	    Recipient rule
	
	An activity condition determines which activity will execute and what happens when that activity executes.
	
	A recipient rule determines to whom or to which distribution list a message will be sent.

Activity Condition	Determines whether a next activity will be executed. If the value is blank, the next activity will be executed unconditionally.

Field	Explanation
Next Activity	The next activity that will be executed in the workflow process following the completion of the current activity.

Activating or Deactivating a Workflow Process

After you create the activities within the process, add activity conditions, distribution lists, and so on, 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 contain event rules, and that there are relationships between all activities and activity conditions. If the process cannot be verified, it will not be 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 a Workflow process is active or contains instances, you must purge the process data, deactivate the process, and then edit it. You can also copy a version of a process and rename it.

See *Purging Workflow Data Files* for more information about purging data.

▶   **To activate or deactivate a Workflow process**

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

1. On Work With Processes, find and choose the process you want to activate.

2. From the Row menu, choose Activate to activate the process.

3. From the Row menu, choose Deactivate to deactivate the process.

    You should deactivate a process if you want to modify it.

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 application (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 attach Workflow processes in event rules within Report Design Aid (RDA), Table Design Aid (TDA), or through named event rules (NER). Note, though, that you should not attach a Workflow process that initiates interactive applications or executables through RDA, TDA, or NER because they typically run on the server; therefore, no one would ever see the applications initiated by the process. Use discretion when designing processes that run on servers.
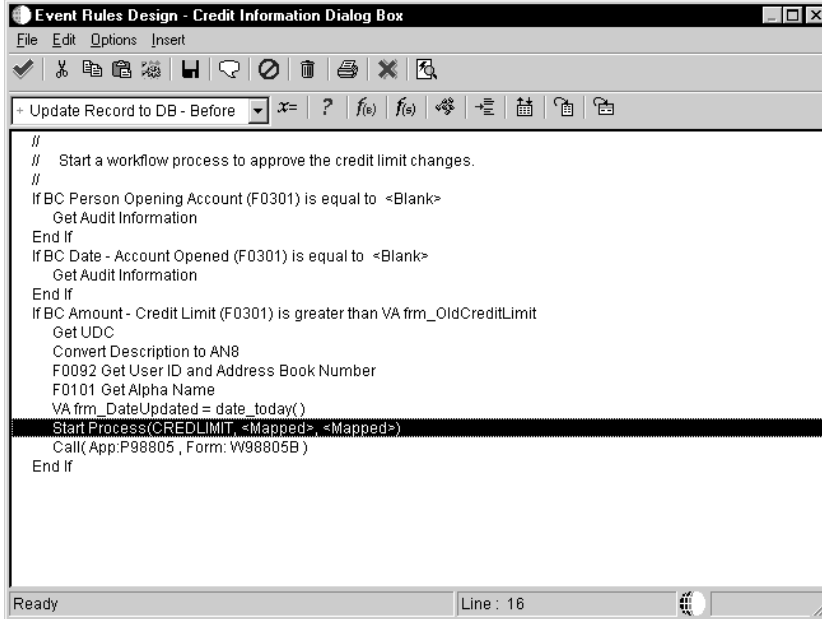
The following tasks explain how to attach the process called CREDLIMIT to an application and how to call a "pending approval" message that appears within the Credit Master application when a user makes a change to a customer's credit limit. This example is specific to the Credit Limit Changed process; the way in which you attach your processes will vary.

Complete the following tasks:

- Attach the Start Process to an application
- Attach a form interconnection that calls the Pending Approval notification message

Example of the Start Process in Event Rules

In this example, the highlighted row of logic is the system function logic that starts the Workflow process.


Before You Begin

☐ Understand how to attach event rules to applications. See *Event Rules* in the *OneWorld Development Tools Guide*.

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

1. Find and check out the application in Object Librarian. For example, check out P0301 - Revise A/R Information.

2. Open the application in Form Design Aid.

3. Find the form to which you want to attach the Start Process.
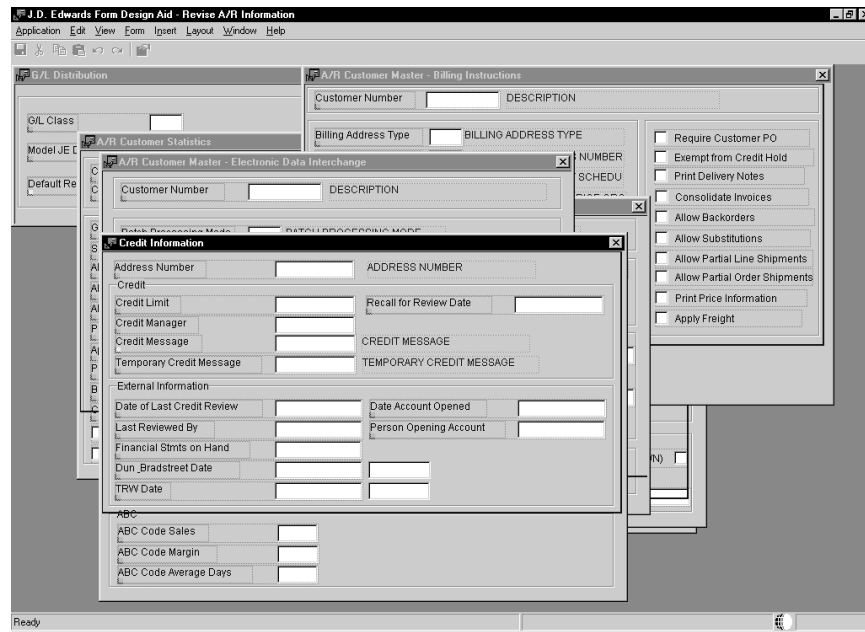
4. Open the event rules for the form, position the cursor where you want to add the Start Process, and click the System Function button.
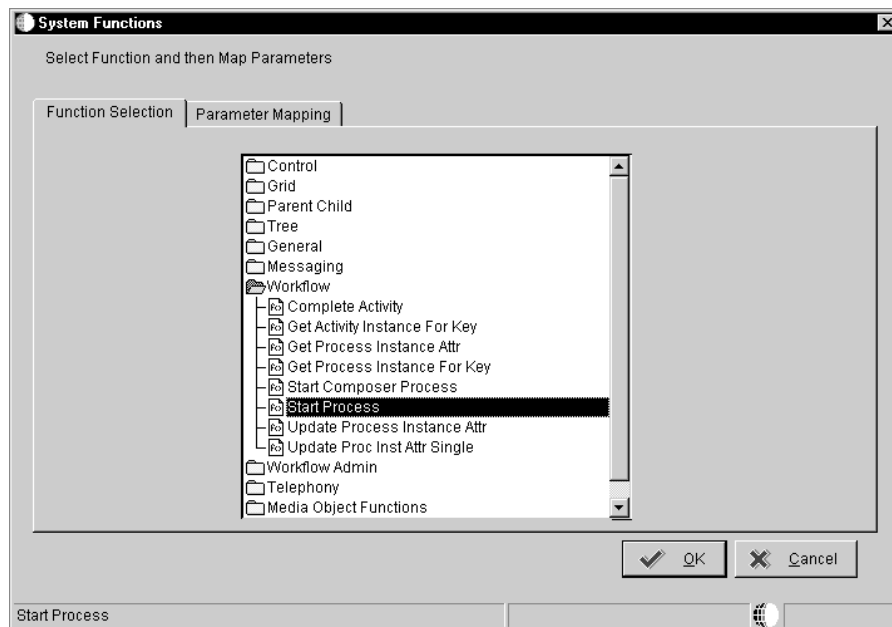

5. On Function Selection, double-click the Workflow folder and choose Start Process.

6. Click the Parameter Mapping tab and double-click <Choose Process>.

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

8. The Workflow engine only runs an active process. So 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.
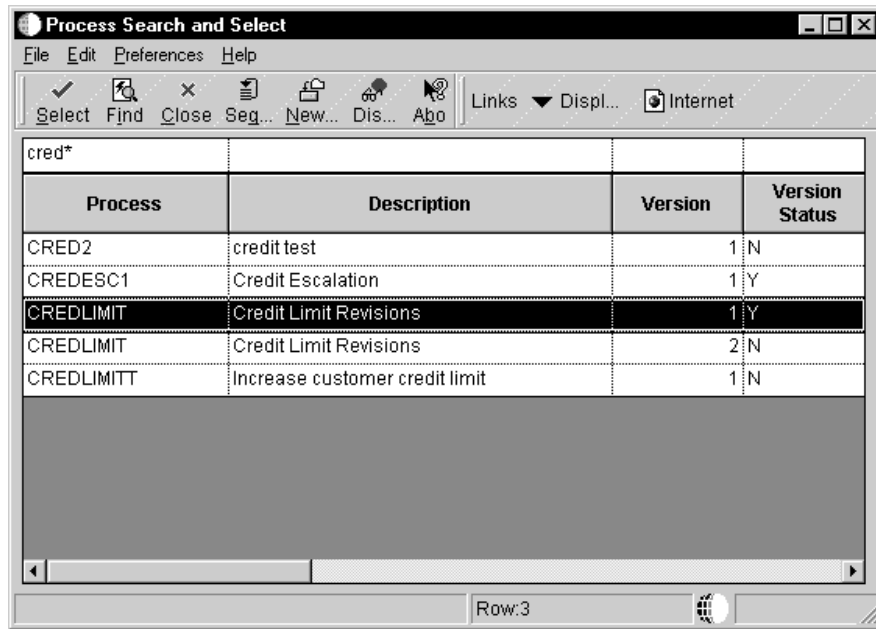
9. On System Functions, choose the Key DS data item, and double-click the <Define Mapping> object.

10. On Data Structure Mapping, map the Key DS to the corresponding object in the Available Objects list and click OK.
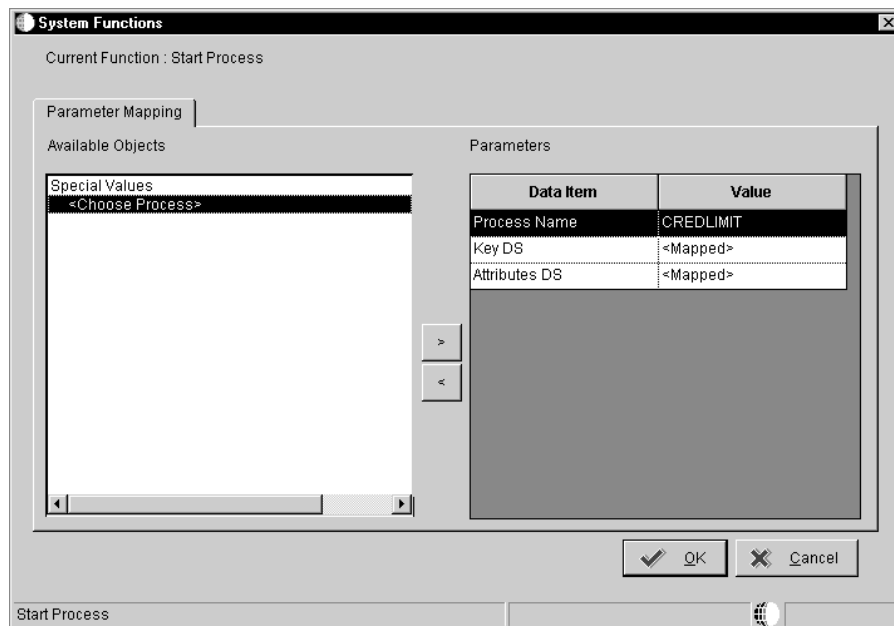
▶ **To add a form interconnection that calls the Pending Approval form**

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 will be made pending approval from others.

1. On Event Rules, click the Form Interconnect button.

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

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

4. On Form Interconnections, map the appropriate parameters, if applicable.

   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 would not need to pass any values to this form.

See Also

- *Event Rules Design* in the *OneWorld Development Tools Guide* for information about attaching event rules to applications.

Using Visio to Set Up Workflow Processes

You can use the Visio Professional graphical display tool to set up your Workflow processes. Visio Professional makes the setup process easier 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.

This section describes the following:

❑ Setting up Workflow activities in Visio

❑ Working with an existing Workflow process in Visio

❑ Using editing tools in Visio

Before You Begin

❑ Install Visio Professional 5.0 on your workstation.

Setting Up Workflow Activities in Visio

After you setup 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 in the process an activity or activity condition should be placed, or where a subprocess should exist.

The following tasks are described:

❑ Specifying Visio as the design interface

❑ Attaching activities to a process in Visio

❑ Attaching activity conditions to activities in Visio

❑ Attaching a plain connector to activities in Visio

❑ Viewing activity condition text in Visio

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**

From Workflow Management Setup (G0241), right-click Process Master.

1. Choose Prompt for Values from the drop-down list.
2. On Processing Options, choose the Graphics tab.
3. 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 you use to attach activities to the process. The palette on the left of the Visio desktop contains all the icons and connectors you need to set up your process.
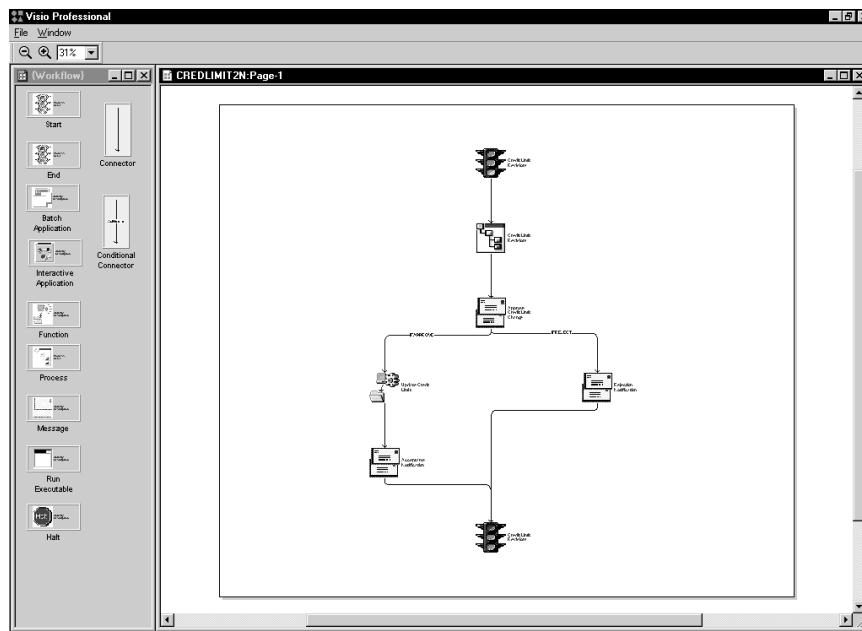
Following is an explanation of each icon and connector:

Plain connector	You use the plain connector to attach 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 and restarts it after a specified period of time.

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

1. From the palette, drag the icon that corresponds to the activity 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.

    Process Rule Search & Select appears.

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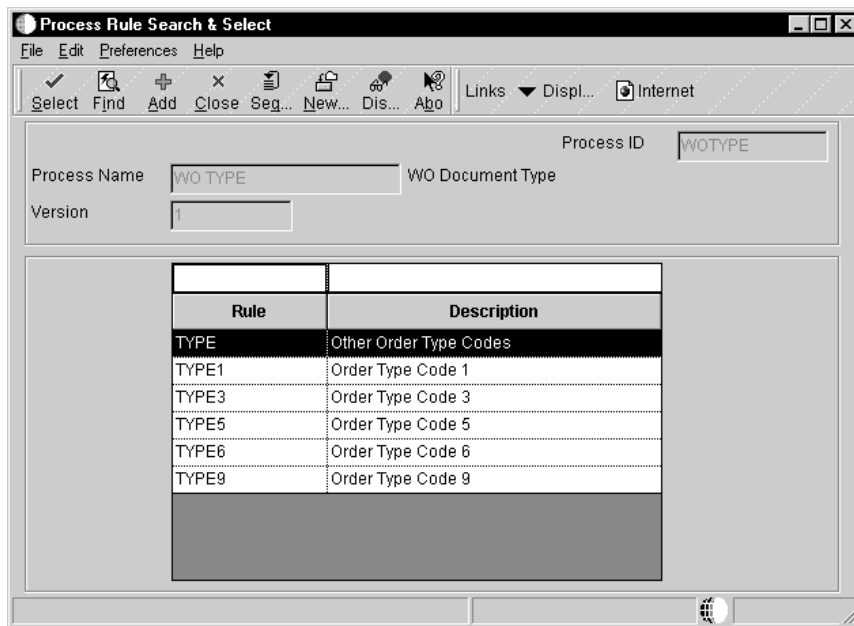
2. Click Find to view all the activity conditions associated with this process.

3. Choose the condition 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.

    If the connector is attached properly, you will 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 and choose View, 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 the plain connector to attach activities to the start and end icons in the process.

▶ **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.
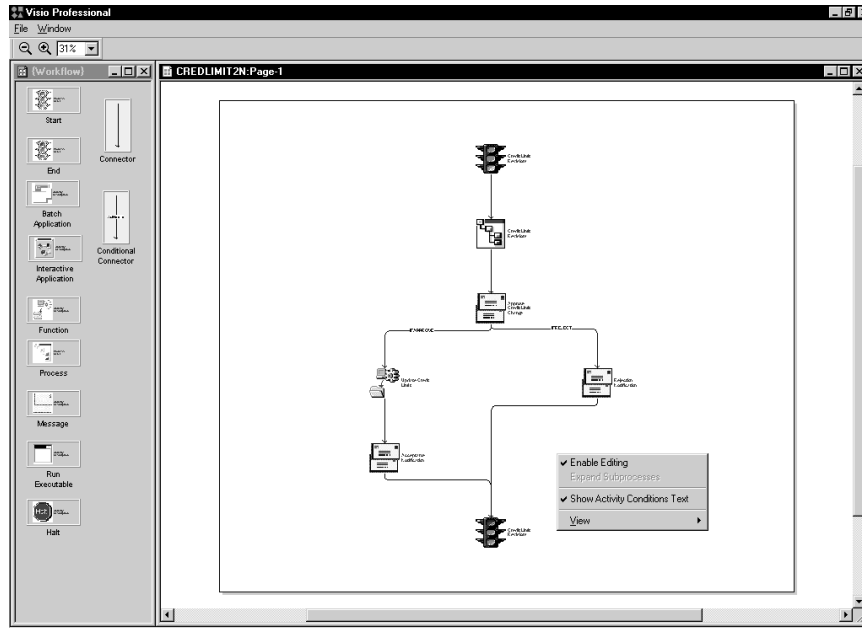
Viewing Activity Condition Text in Visio

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**

In Visio Professional

1. Right-click anywhere on the desktop.
2. Choose the Activity Conditions Text option.

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 in a process each activity and activity condition occurs.

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 particular subprocess.

The following tasks are described:

❑ Modifying a process and its activities in Visio

❑ Viewing subprocesses in Visio

Before You Begin

❑ Make sure you have activated the graphic display processing option before you open the process. Otherwise, the system will 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.

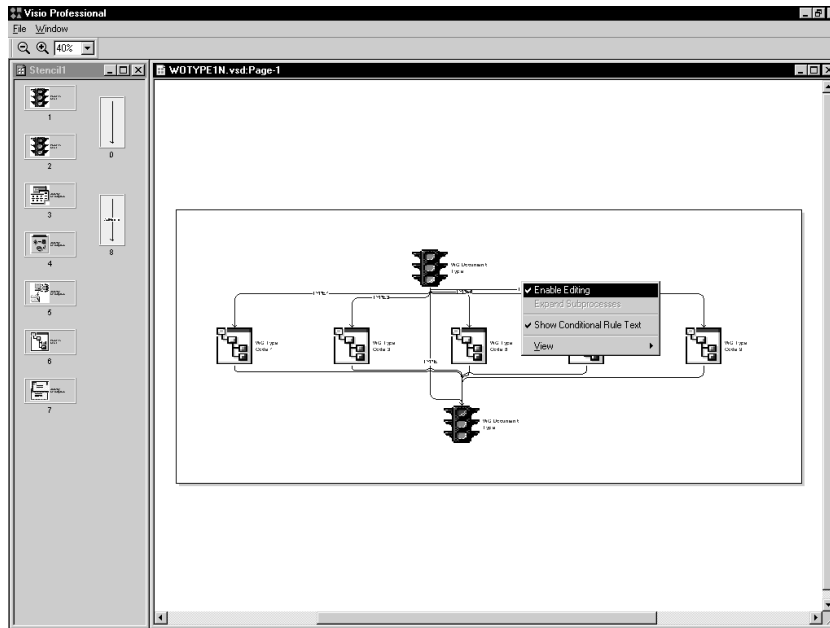▶ **To modify a process and its activities in Visio**

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

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

2. From the Row menu, choose Process Relationships.

    The system opens the process in Visio.

3. 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.

4. 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.

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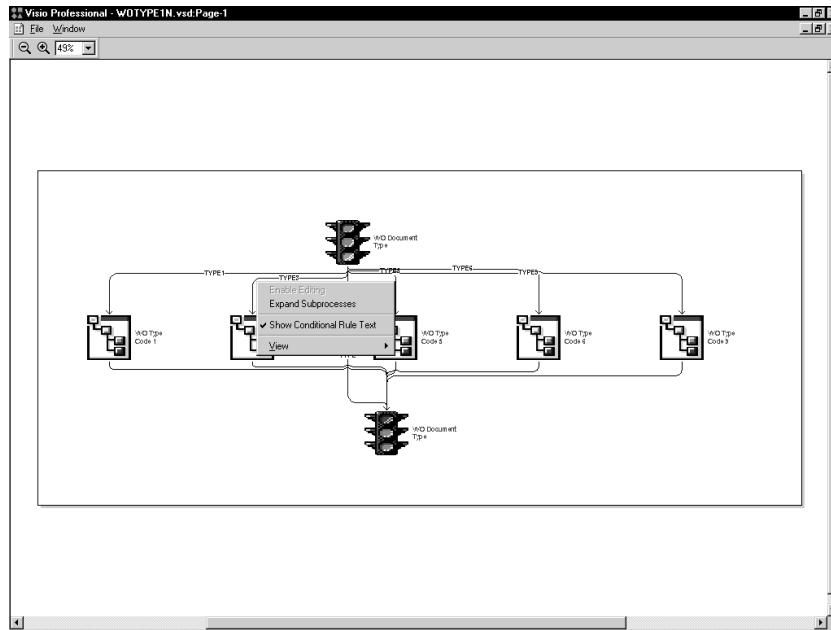
Complete the following tasks:

*   Expand all processes in Visio
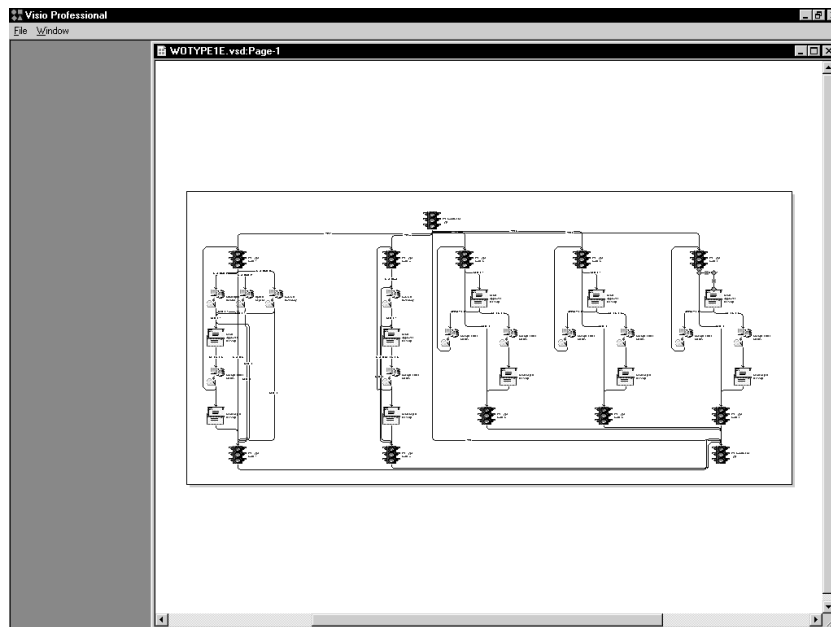*   Expand one process in Visio

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

In Visio Professional

1. Right-click anywhere on the desktop.

2. Choose Expand Subprocesses.

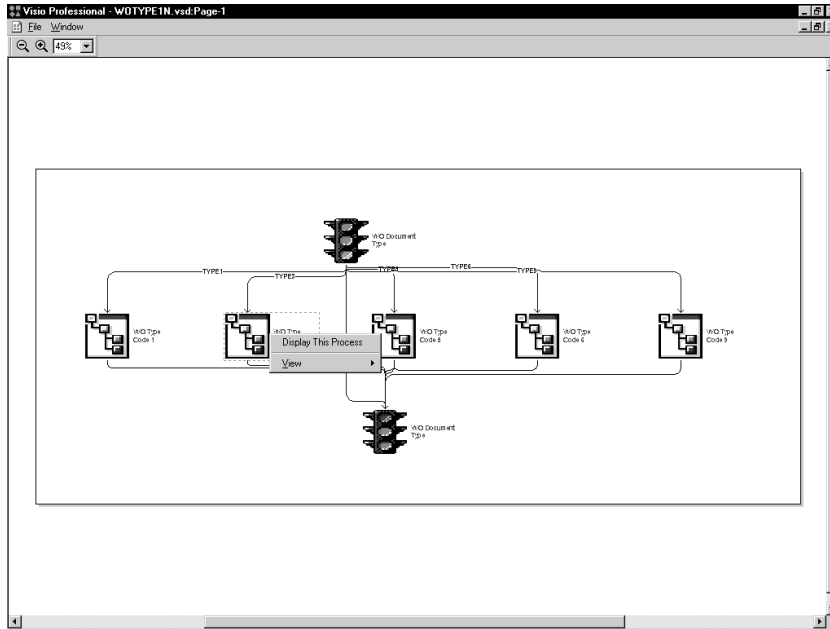

The system displays all subprocesses within the the processes.

3. After you expand the subprocesses, you can right-click and choose Compress Subprocesses to return to the original view.
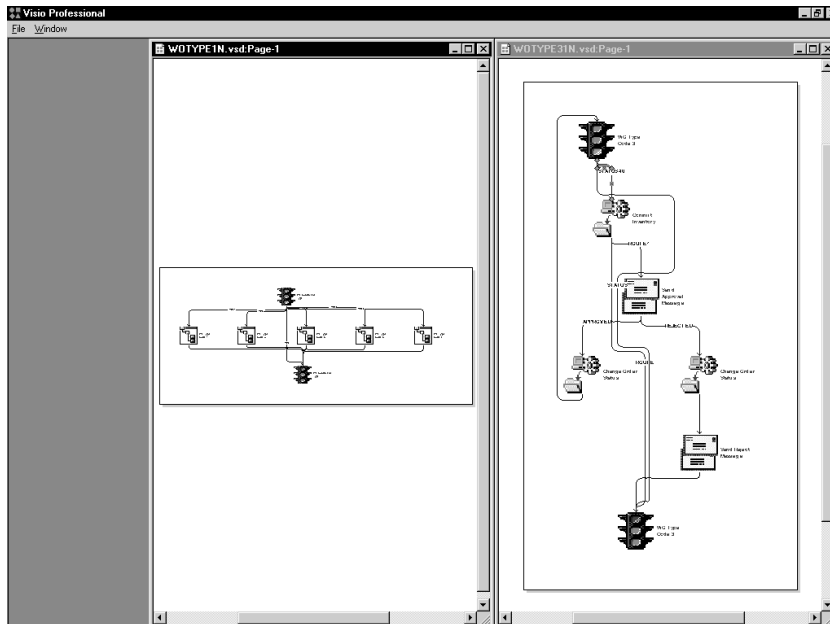
▶ **To expand one process in Visio**

In Visio Professional

1. 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.

The following topics are described:

- ❑ Using the magnification option in Visio

- ❑ Viewing the ruler, the grid, and the guides in Visio

- ❑ Printing activity condition text from Visio

- ❑ Moving connectors in Visio

Using the Magnification Option in Visio

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**

In Visio Professional

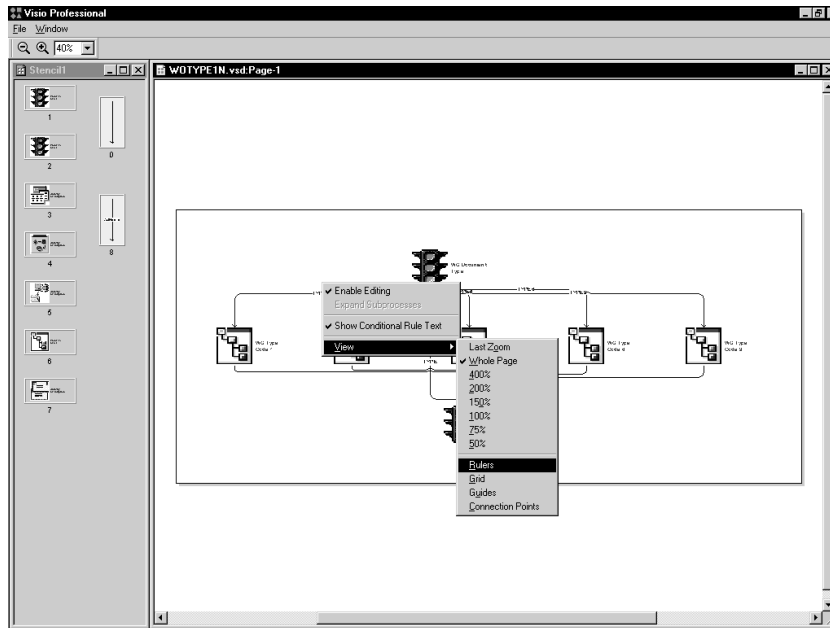1. Right-click anywhere on the desktop.
2. Choose View, then choose one of the magnification options.

Viewing the Ruler, the Grid, and the Guides in Visio

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 from Visio

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**

In Visio Professional

1. Choose Print from the File menu.
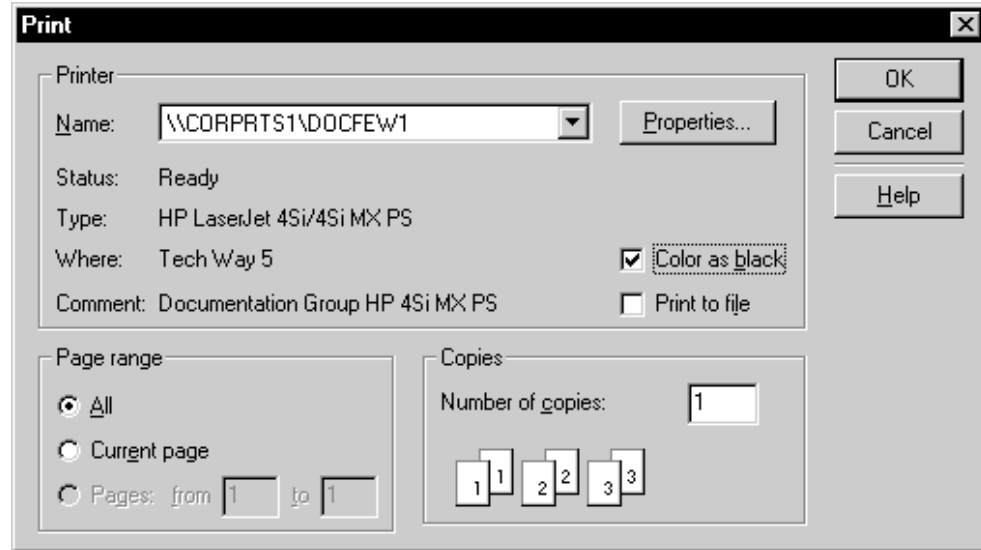
2. On the Print dialog box, turn on the Color as black option, specify any other printing options, and click OK.

Moving Connectors in Visio

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**

In Visio Professional

1. Click the connector you want to move. Small green boxes appear along the length of the connector.
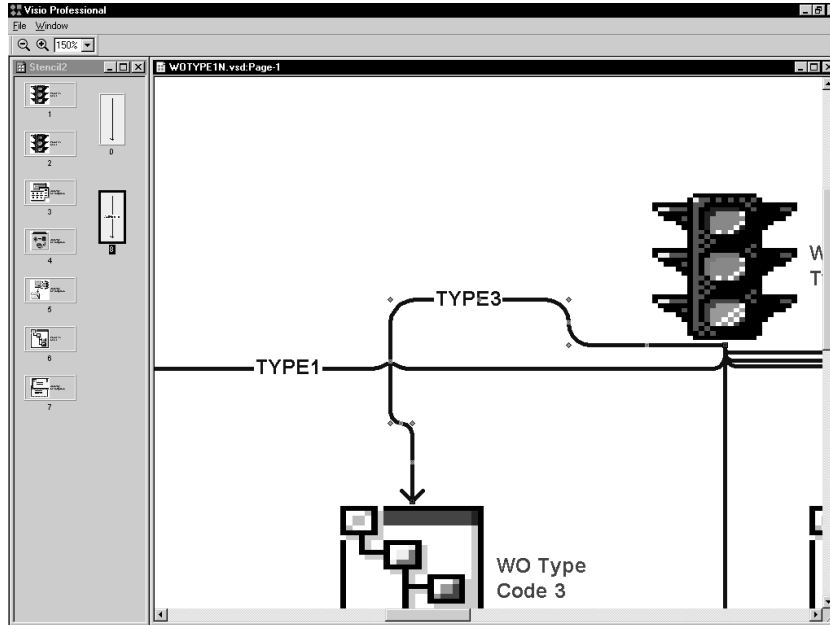
2. Drag any of the green boxes to the position you want.

3. To move the connector back to its original position, right-click the connector and choose Position Automatically.

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 *OneWorld Foundation Guide* for more information about adding applications to menus.

This section describes the following:

❑ Monitoring process activity

❑ Changing queue security

❑ Activating the escalation monitor

❑ Analyzing Workflow processes

❑ Printing process instance reports

❑ Purging Workflow data files

❑ Copying process data to another data source

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, or resume 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) who was assigned to that activity, the start and end time of each activity, and the time and date an activity expired.

Furthermore, you can review message text that was attached to any messages. 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 *Working with 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 might become queued up until the first one is completed. For example, there might be several credit limit change requests 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.

This chapter describes the following tasks:

❑ Reviewing a process status

❑ Terminating, suspending, or resuming an instance of a process

❑ Reviewing attachments to an activity

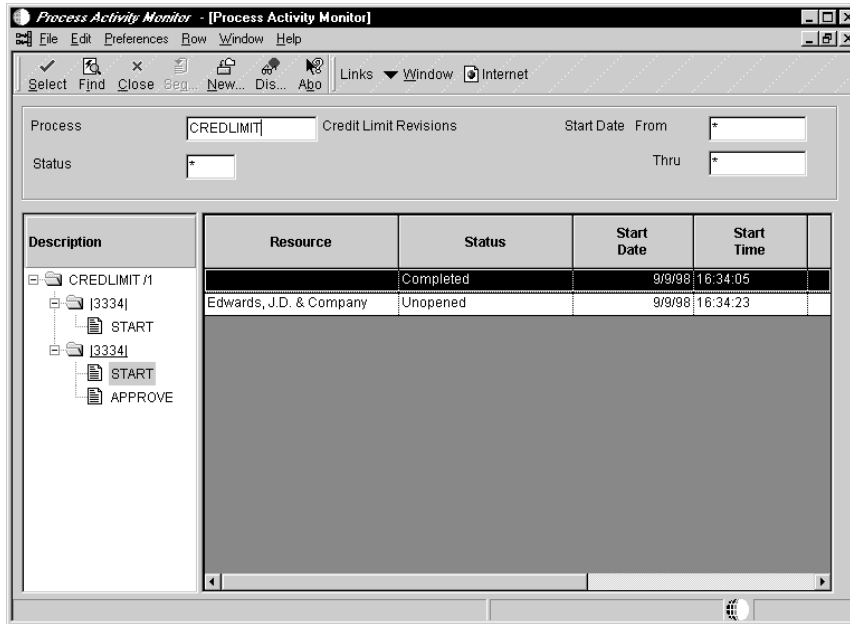❑ Overriding the message approval process

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**

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

On Process Activity Monitor

1. Complete the following field:

   • Process ID

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

2. Complete the following optional fields:

   • Process Status

   • Start Date

   • Start Date

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

Field	Explanation
Process ID	The unique identifier for a process. If no value is entered, a next number is assigned. Once assigned, the value cannot be changed.
Process Status	The current status of a workflow process instance. Valid values are: Active Inactive Completed Suspended Terminated Error Awaiting

Field	Explanation
Start Date From	For a process, this is the date on which the workflow transaction was entered. For an activity, this is the date on which the activity was started within the process flow.
Description	A user defined name or remark.

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 messages because he 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 choose Resume to restart a suspended instance of a process.

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

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

1. On Process Activity Monitor, find the process you want to work with.

2. 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**

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

1. Find the process you want to work with.

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

3. From the Row menu, choose Attachments.

   If an activity does not contain attachments, the Attachments option on the row menu will not be 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.

Note that the Overrides option is enabled if one or more of the following conditions is met:

- You exist in the Address Book

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

- The message is unopened

- The message has an active shortcut

See *Understanding Distribution Lists* and *Working with Distribution Lists* for more information about Higher Level Overrides.

▶ **To override the message approval process**

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

On Process Activity Monitor

1. Find the process and activity that you want to work with.

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

3. Choose Override from the Row menu.

   The system displays the Higher Level Override form.

4. Accept or reject the message.

   The system returns to Process Activity Monitor.

5. Click OK.

Changing Queue Security

You can change the security status for a user or group of users within a Workflow message queue. You can either give a user authority to monitor everyone's queues within a group or deny users access to certain queues.

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 they can monitor all messages within certain queues. Or you might set up security by distribution list only, so that users within a distribution list have authority to monitor certain queues. If you want to give only a few people within a distribution list access to certain queues, you would enter the distribution list and the user's address book number to define which queues that user in a particular distribution list can access.
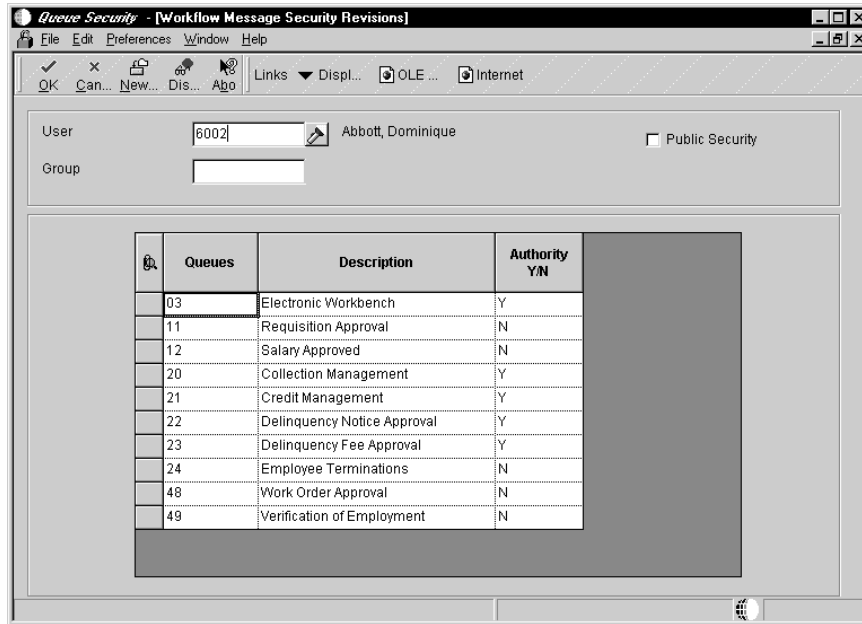
Complete the following tasks:

- Specify the queues a user can view
- Change a user's queue security

▶ To specify the queues a user can view

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

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

1. On Work With Queue Security, click Add.

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

   • User

   • Group

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

   • Authority Y/N

   In this example, Dominique Abbot has access to the Electronic Workbench, Collection Management, Credit Management, Delinquency Notice Approval, and Delinquency Fee Approval queues. Therefore, she can monitor all messages within these queues.

Field	Explanation
User	A user in the workflow system.
Group	A group or list of users in the the workflow system. This is the number of the workflow distribution list.
Authority Y/N	Indicates whether the user is authorized to make changes to security information.
	. . . . *Form-specific information* . . . .
	For workflow, indicates whether the user can view other queues in the Work Center.

▶   **To change a user's queue security**

You can deny a user access to queues or allow the user to view all messages within certain queues available to the group.

If you choose the Public Security option, all users will 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 will be able to view all messages in that queue.

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

1. On Work With Workflow Message Security, find and choose the user's record and click Add.

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.

Field	Explanation
Public Security	Workflow security records can be set up so that all or *PUBLIC users have access to specific queues. By choosing this option, any queue that has been selected by placing a Y next to it will have a *PUBLIC record written for it. This will allow any user to view any other user's messages in this queue.

See Also

- *User Defined Codes* in the *OneWorld Foundation Guide*

Activating the Escalation Monitor

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

This chapter describes how to start the escalation monitor manually by submitting its batch version, as you would 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 Guide* for more information.

If the Scheduler is not used, you should restart the escalation monitor each time it stops, with an acceptable duration in between depending on the urgency of Halts and Escalations. The Escalation Monitor will 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 would be beneficial to use the Scheduler application to automatically restart the escalation monitor for you.

▶ **To activate the escalation monitor**

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

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

2. 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* in this guide for information about monitoring for escalation in message activities.

- *Scheduling Jobs* in the *System Administration Guide* for information about automatically restarting the escalation monitor (Check for Expired Activities batch process - 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 data displayed in the Advanced Analysis form to a spreadsheet, or create graphs and charts of the information. See the *OneWorld Foundation Guide* for more information about these options.

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 be 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 they belong to 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 that the user was responsible for.
Process, version, by user	The average duration of the instances for that version that the user was responsible for. 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 that the user was responsible for. The activities are averaged together regardless of whether the instances they belong to 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.

When you choose the User option, a resource column appears in the detail area. The User column identifies the user that was assigned to that particular activity.

On Workflow Advanced Analysis
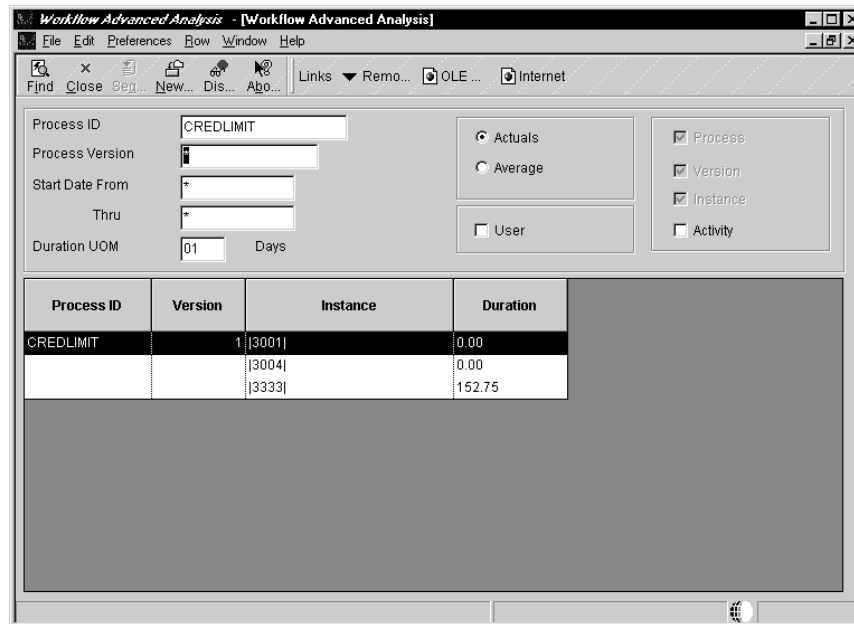
1. Click Find to query all processes, or complete the following field and click Find to query a particular process:

    - Process ID

2. Complete the following optional fields:

    - Process 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.

Field	Explanation
Process ID	The unique identifier for a process. If no value is entered, a next number is assigned. Once assigned, the value cannot be changed.
Process Version	A number from 1 to 99999 that identifies a unique version of a workflow process.
Start Date From	For a process, this is the date on which the workflow transaction was entered. For an activity, this is the date on which the activity was started within the process flow.
Thru	For a process, this is the date on which the workflow transaction was completed. For an activity, this is the date on which the activity was completed within the process flow.
Duration UOM	The units in which the duration of time for a process, activity or instance should display.
Actuals	Indicates that the actual workflow instance data should be displayed.
Average	Indicates that the average workflow instance data should be displayed.
User	Indicates that the workflow data should be displayed by the responsible resource for the instance or activity.
Process	Indicates that the workflow data will be displayed by process.
Version	Indicates that the workflow data will be displayed by the version of a process.
Instance	Indicates that the workflow data will be displayed by instance, within a version for each process.

Field	Explanation
Activity	Indicates that the workflow data for each activity within a process will be displayed.

Printing Process Instance Reports

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

▶ **To print process instance reports**

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

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

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

    - Data Selection

    - Data Sequencing

3. 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 Guide* for more information about how to submit reports.

Purging Workflow Data Files

You purge Workflow data files periodically to recover disk space. You can purge completed tasks or completed processes. Purging completed tasks deletes messages; purging completed processes deletes instances.

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

▶ **To purge Workflow data files**

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

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

2. On Version Prompting, choose any of the following, then click the Submit button:

   • Data Selection

   • Data Sequencing

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

   • On Screen

   • To Printer

Copying Process Data to Another Data Source

You can 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 modify J.D. Edwards data. Effective with B73.3.1, Workflow Data Merge (PH9001) merges customer workflow data with J.D. Edwards workflow data.

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

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 will 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 will not appear in the destination data source.
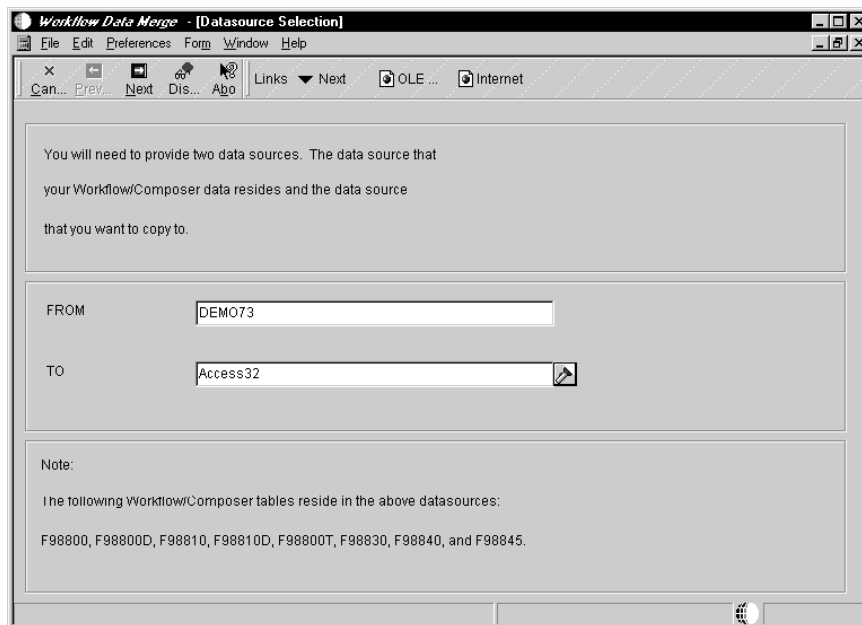
See the appropriate Microsoft documentation for information about ODBC drivers.

▶ To copy process data to another data source

From Workflow Management Setup (G0241), choose Workflow Data Merge.
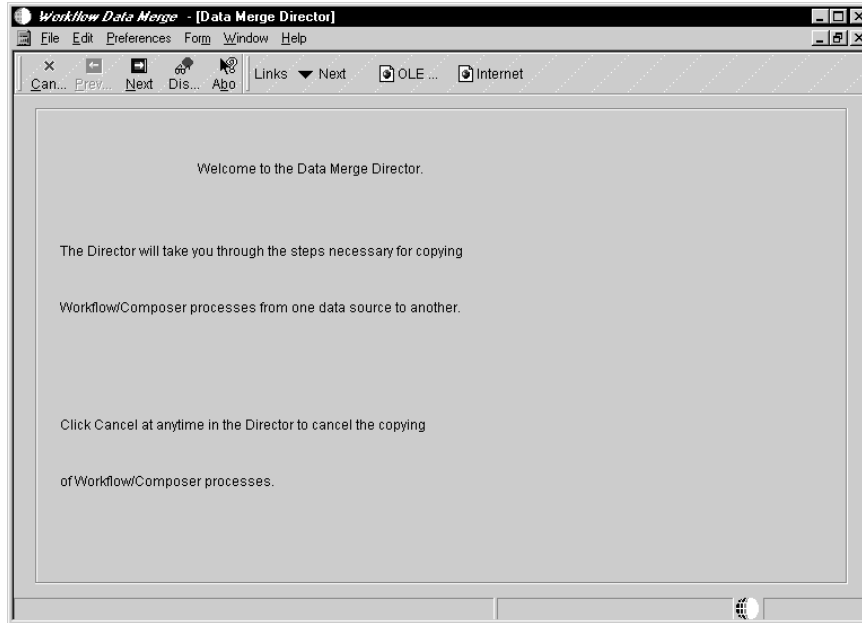
1. On the Welcome form of Data Merge Director, click Next.

2. On Data Source Selection, enter the name of the data source in which the process data resides and the name of the destination data source in the FROM and TO fields.

    Make sure you choose the data source in which the F98800, F98800D, F98810, F98810D, F988805, F98830, F98840, and F98845 tables reside. These tables contain the general Workflow tables, organizational rules, activities, and so on.

If you are not sure which data structure contains the tables you want to work with, you can use the Object Configuration Manager to find them. See the *Configurable Network Computing Implementation Guide* for more information.

3.   Click Next.

The system displays the F98811 Data Source Selection form.

4.   Enter the names of the data source in which the Workflow or ActivEra event rules reside and the name of the data source to which you want to copy the event rules in the FROM and TO fields.

You must complete the F98811 Datasource Selection form regardless of whether you are are copying process data from an AS/400 machine or not. Binary Large Objects (BLOBs) need to have a separate data source for the table that is set to "Do not translate" or your data will be corrupted. In addition, the AS/400 might have a different name, whereas a non-AS/400 machine might not.

If you are not copying process data from or to an AS/400 machine, enter the data source names that you entered into the first Datasource Selection form.

5.   Click Next.
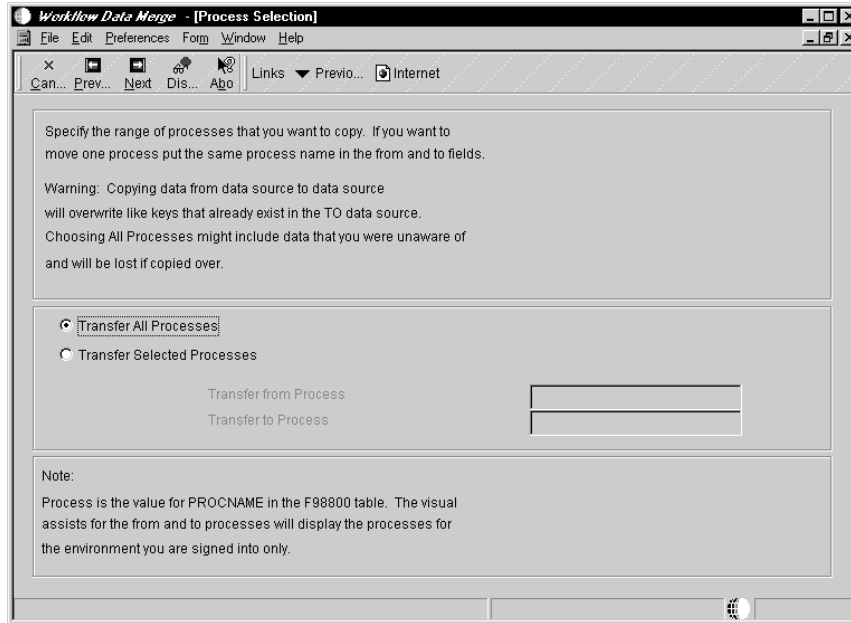
6. On Process Selection, specify whether you want to copy all processes, a range of processes, or just one process.

    If you want to copy all processes, click the Transfer all Processes option. Note that it might take a considerable amount of time to copy all processes.

    If you want to copy a range of processes, click the Transfer Selected Processes option. Enter the name of the first process in the Transfer from Process ID field and enter the name of the last process in the Transfer to Process ID field.

    If you want to copy a single process, click the Transfer Selected Processes option and enter the name of that process in both of the following fields:

    - Transfer from Process ID
    - Transfer to Process ID

    NOTE: If you are copying processes that contain numeric names, you must enter the exact number of the first process and the exact number of the last process. You cannot enter an arbitrary range of numbers in these fields or the system will not copy the data.

7. Click Next.

    The system displays Workflow Data Merge Selections.
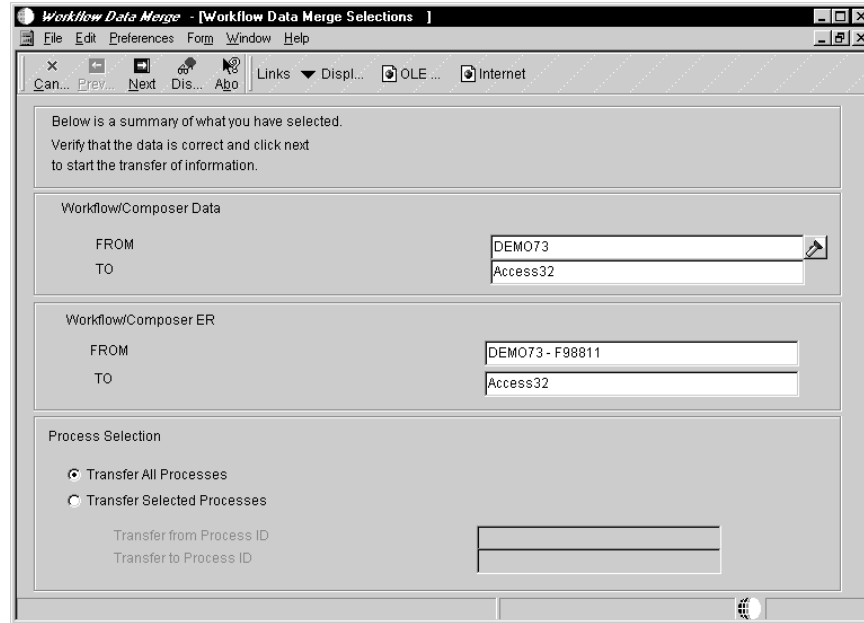
8. Verify that the data you entered is correct and click Next.

9. The system warns you that it is going to start the data merge process and asks if you want to continue. Click OK.

   If any errors occur during processing, the system informs you what they are.

10. To ensure that the system copied the processes that you specified, you can check the jde.log, or you can check the data using Universal Table Browser.

See Also

- The *System Administration Guide* for information about jde.log files.
- The *OneWorld Development Tools Guide* for information about Universal Table Browser.

Appendices

Appendix A – 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 Route 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

Glossary

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action message. With OneWorld, users can receive messages (system-generated or user-generated) that have shortcuts to OneWorld forms, applications, and appropriate data. For example, if the general ledger post sends an action error message to a user, that user can access the journal entry (or entries) in error directly from the message. This is a central feature of the OneWorld workflow strategy. Action messages can originate either from OneWorld or from a third-party e-mail system.

alphabetic characters. Characters on the keyboard including letters of the alphabet and all other symbols (such as *, &, #), but excluding numerals 0 through 9. For example, "ABC*" is a string of alphabetic characters, but "ABC123" is not. Also referred to as an alpha character. Contrast with alphanumeric characters and numeric characters.

alphanumeric characters. The complete set of characters on the keyboard including letters of the alphabet, symbols, and numerals. For example, "ABC*123" is a string of alphanumeric characters. Contrast with alphabetic characters and numeric characters.

alternate language. A language other than English, which is designated in the user profile. A language preference code is used to set the preferred language for each user to display data for online and printed output.

applet. A small application, such as a utility program or a limited-function spreadsheet. It is generally associated with the programming language Java, and in this context refers to Internet-enabled applications that can be passed from a Web browser residing on a workstation.

application. A computer program or set of programs used to accomplish a task. In OneWorld, there are interactive applications and batch applications. Interactive applications are made up of a set of forms through which the user interacts with OneWorld. Interactive application identifiers begin with "P." For example, Address Book Revisions (P01012) is an interactive application. Batch applications run without user interaction. Reports and table conversions are examples of batch

applications. Batch application identifiers begin with "R." For example, the Print Mailing Labels report (R01401) is a batch application.

application programming interface (API). A software function call that can be made from a program to access functionality provided by another program.

application server. A server in a local area network (LAN) that contains applications used by network clients.

application workspace. The area on a workstation display in which all related forms within an application appear.

architecture. The underlying design of a computer that defines data storage methods, operations, and compatibility requirements with other systems and software. It also refers to specific components of a computer system, the way they interact with each other, and the type of CPU chip that is used as the basis of a computer system.

AS/400 common. The AS/400 library that typically contains WorldSoftware control files. Can also refer to as an AS/400 Common data source used in OneWorld.

AS/400 COMMON. A data source that resides on an AS/400 and holds data that is common to the coexistent library allowing OneWorld to share information with World.

asynchronous. A method of running table conversions in which starting one conversion does not rely on another conversion's successful completion.

audit trail. The detailed, verifiable history of a processed transaction. The history consists of the original documents, transaction entries, and posting of records and usually concludes with a report.

automatic accounting instruction (AAI). A code that refers to an account in the chart of accounts. AAIs define rules for programs that automatically generate journal entries, including interfaces between the Accounts Payable, Accounts Receivable, Financial Reporting, and General

Accounting systems. Each system that interfaces with the General Accounting system has AAIs. For example, AAIs can direct the General Ledger Post program to post a debit to a specific expense account and a credit to a specific accounts payable account.

base release. The first generally available software for a OneWorld release. See also release, release level.

batch. A group of similar records or transactions that the computer treats as a single unit during processing. For identification purposes, the system usually assigns each batch a unique identifier known as a batch number.

batch application. A single task or groups of tasks that the system treats as a single unit during processing. The computer performs batch applications (jobs) with little or no user interaction. Printing reports and purging files are examples.

batch control. A feature that verifies the number of transactions and the total amount in each batch that you enter into the system.

batch input. A group of transactions loaded from an external source.

batch job. A task or group of tasks you submit for processing that the system treats as a single unit during processing, for example, printing reports and purging files. The system performs a batch job with little or no user interaction.

batch processing. A method by which the system selects jobs from the job queue, processes them, and sends output to the outqueue. Contrast with interactive processing.

batch server. A server on which OneWorld batch processing requests (also called UBEs) are run instead of on a client, an application server, or an enterprise server. A batch server typically does not contain a database nor does it run interactive applications.

batch type. A code assigned to a batch job that designates to which system the associated transactions pertain, thus controlling which records are selected for processing. For example, the Post General Journal program selects for posting only unposted transaction batches with a batch type of O.

batch-of-one immediate. A transaction method that allows a client application to perform work on a client workstation, then submit the work all at once to a server application for further processing. As a batch process is running on the server, the client

application can continue performing other tasks. See also direct connect, store-and-forward.

binary large object (BLOB). A database field that has no maximum size limit and holds any digitized information. This field is often used to store objects, such as graphical representations or data structures, rather than standard alphanumeric data.

binary string (BSTR). A length prefixed string used by OLE automation data manipulation functions. Binary strings are wide, double-byte (Unicode) strings on 32-bit Windows platforms.

broadcast message. 1) An e-mail message that you send to multiple recipients. 2) A message that appears on a form instead of in your mailbox.

browser. A client application that translates information sent by the Worldwide Web. A client must use a browser to receive, manipulate, and display Worldwide Web information on the desktop. Also known as a Web browser.

business function. An encapsulated set of business rules and logic that can normally be reused by multiple applications. Business functions can execute a transaction or a subset of a transaction (check inventory, issue work orders, and so on). Business functions also contain the APIs that allow them to be called from a form, a database trigger, or a non-OneWorld application. Business functions can be combined with other business functions, forms, event rules, and other components to make up an application. Business functions can be created through event rules or third-generation languages, such as C. Examples of business functions include Credit Check and Item Availability.

business function event rule. Encapsulated, reusable business logic created using through event rules rather than C programming. Contrast with embedded event rule. See also event rule.

business view. Used by OneWorld applications to access data from database tables. A business view is a means for selecting specific columns from one or more tables whose data will be used in an application or report. It does not select specific rows and does not contain any physical data. It is strictly a view through which data can be handled.

Business View Design Aid (BDA). A OneWorld GUI tool for creating, modifying, copying, and printing business views. The tool uses a graphical user interface.

category code. A type of user defined code for which you can provide the title. For example, if you were adding a code that designated different sales regions, you could change category code 4 to Sales Region, and define E (East), W (West), N (North), and S (South) as the valid codes. Sometimes referred to as reporting codes. See also user defined code.

central objects. Objects that reside in a central location and consist of two parts: the central objects data source and central C components. The central objects data source contains OneWorld specifications, which are stored in a relational database. Central C components contain business function source, header, object, library, and DLL files and are usually stored in directories on the deployment server. Together they make up central objects.

Central Objects merge. A process that blends a customer's modifications to the objects in a current release with objects in a new release.

central processing unit (CPU). Computer component which carries out the logic, calculation and decision–making functions. Interprets and executes instructions upon receipt.

character conversion. The process of converting characters of the same language from one encoding scheme to another while sending and receiving data in a heterogeneous environment.

character set. An ordered set of characters representing any particular language.

chart. OneWorld term for tables of information that appear on forms in the software. See forms.

chart of accounts. The structure for general ledger accounts. The chart of accounts lists types of accounts, describes each account, and includes account numbers and posting edit codes.

check-in location. The directory structure location for the package and its set of replicated objects. This is usually \\deploymentserver\release\path_code\ package\packagename. The subdirectories under this path are where the central C components (source, include, object, library, and DLL file) for business functions are stored.

child. See parent/child form.

client. 1) A workstation or PC in a client/server environment. 2) The receiving end of the spectrum in a request/supply relationship between programs.

client workstation. The computer on which a user operates OneWorld software applications.

client/server. A relationship between processes running on separate machines. The server process is a provider of software services. The client is a consumer of those services. In essence, client/server provides a clean separation of function based on the idea of service. A server can service many clients at the same time and regulate their access to shared resources. There is a many-to-one relationship between clients and a server, respectively. Clients always initiate the dialog by requesting a service. Servers passively wait for requests from clients.

cluster. A group of two or more servers with identical configurations used to provide protection against failure. If one server fails, the other can continue processing.

code page. An ordered set of characters in which an alphanumeric value (code point) is associated with each character set.

code point. The numeric identifier assigned to a character. Its value is usually expressed in a hexadecimal notation.

coexistence. An AS/400 configuration of J.D. Edwards software that allows shared data interface operation to occur between OneWorld and WorldSoftware.

commit. A process that ensures that all database changes for a single transaction occur simultaneously. The changes are treated as a single unit; either all changes occur or none of the changes occur, thereby maintaining the integrity of the database.

common object request broker architecture. An object request broker standard endorsed by the Object Management Group.

component object model (COM). A specification developed by Microsoft for building software components that can be assembled into programs or add functionality to existing programs running on Microsoft Windows platforms. COM components can be written in a variety of languages, although most are written in C++, and can be unplugged from a program at runtime without having to recompile the program.

Conference Room Pilot environment. A OneWorld environment used as a staging environment for production data, which includes constants and masters tables, such as company

constants, fiscal date patterns, and item master. Use this environment along with the test environment to make sure your configuration works before you release changes to end–users.

configurable client engine. Allows user flexibility at the interface level. Users can easily move columns, set tabs for different data views, and size grids according to their needs. The configurable client engine also enables the incorporation of Web browsers in addition to the Windows 95- and Windows NT-based interfaces.

Configurable Network Computing (CNC). An application architecture that allows interactive and batch applications, composed of a single code base, to run across a TCP/IP network of multiple server platforms and SQL databases. The applications consist of reusable business functions and associated data that can be configured across the network dynamically. The overall objective for businesses is to provide a future-proof environment that enables them to change organizational structures, business processes, and technologies independently of each other.

constants. Parameters or codes that you set and that the system uses to standardize the processing of information by associated programs.

control. Any data entry point allowing the user to interact with an application. For example, check boxes, pull-down lists, hyper-buttons, entry fields, and similar features are controls.

Control Table Workbench. During the Installation Workbench process, Control Table Workbench runs the batch applications for the planned merges that update the data dictionary, user defined codes, menus, and user overrides tables.

Control Tables merge. A process that blends a customer's modifications to the control tables with the data that accompanies a new release.

cumulative update. A version of OneWorld software that includes fixes and enhancements made since the last release or update.

custom gridlines. A grid row that does not come from the database, for example, totals. To display a total in a grid, sum the values and insert a custom gridline to display the total. Use the system function Insert Grid Row Buffer to accomplish this.

custom installation. One of the two types of installations you can set up in the Installation Planner application. A custom installation gives the customer flexibility in creating a plan with Java and Windows terminal servers, custom environments, and custom data sources. See also typical installation.

custom modifications. Changes customers make to OneWorld to make the software run more efficiently for them or to meet their particular requirements.

customer. The company that purchases and uses OneWorld. A customer contains individual users.

data dictionary. A database table that OneWorld uses to manage the definitions, structures, and guidelines for the usage of fields, messages, and help text. J.D. Edwards has an active data dictionary, which means that it is accessed at runtime.

Data Dictionary merge. A process that updates a customer's data dictionary tables with the data that accompanies a new release.

data mart. Department-level decision support databases. They usually draw their data from an enterprise data warehouse that serves as a source of consolidated and reconciled data from around the organization. Data marts can be either relational or multidimensional databases.

data only upgrade. A process that preserves customer business data when moving from a previous release of OneWorld to a new release. This shortens the upgrade process by eliminating the need to perform the merges and table conversions that incorporate J.D. Edwards data into a customer's existing data.

data replication. In a replicated environment, multiple copies of data are maintained on multiple machines. There must be a single source that "owns" the data. This ensures that the latest copy of data can be applied to a primary place and then replicated as appropriate. This is in contrast to a simple copying of data, where the copy is not maintained from a central location, but exists independently of the source.

data server. A machine required for AS/400 users who need to put central objects in SQL Server or Oracle. Putting central objects on a data server tells OneWorld they are not on the enterprise server.

data source. A specific instance of a database management system running on a computer. Data source management is accomplished through Object Configuration Manager (OCM) and Object Map (OM).

Data Source Workbench. During the Installation Workbench process, Data Source Workbench copies all data sources that are defined in the installation plan from the Data Source Master and Table and Data Source Sizing tables in the Planner data source to the System – release number data source. It also updates the Data Source Plan detail record to reflect completion.

data structure. A group of data items that can be used for passing information between objects, for example, between two forms, between forms and business functions, or between reports and business functions.

data warehouse. A database used for reconciling and consolidating data from multiple databases before it is distributed to data marts for department-level decision support queries and reports. The data warehouse is generally a large relational database residing on a dedicated server between operational databases and the data marts.

database. A continuously updated collection of all information that a system uses and stores. Databases make it possible to create, store, index, and cross-reference information online.

database administrator. The person who has special skills or training in one or more types of database software, for example, SQL Server or Oracle.

database driver. Software that connects an application to a specific database management system.

database management system (DBMS). A computer program that manages data by providing centralized control, data independence, and complex physical structures for efficient access, integrity, recovery, concurrence, control, privacy, and security.

database server. A server that stores data. A database server does not have OneWorld logic.

default. A code, number, or parameter that the system supplies when the user does not specify one.

default. A value that the system assigns when the user does not enter a value. For example, if the default value for an input is N and nothing is entered in that field, the system assumes the default is an N value.

deployment environment. A OneWorld environment used to run OneWorld on the deployment server. This environment administers information for the system data source, such as user profiles, packages, and environments.

deployment server. The computer used to install, maintain, and distribute OneWorld software to one or more enterprise servers and client workstations.

detail. The specific information that makes up a record or transaction. Contrast with summary.

detail area. An area of a form that displays detailed information associated with the records or data items displayed on the form. See also grid.

development environment. A OneWorld environment used to test modified development objects before transferring them to the conference room pilot environment.

direct connect. A transaction method in which a client application communicates interactively and directly with a server application. See also batch-of-one immediate, store-and-forward.

director. A OneWorld user interface that guides a user interactively through a OneWorld process.

disk. A direct access storage device.

distributed computing environment (DCE). A set of integrated software services that allows software running on multiple computers to perform in a manner that is seamless and transparent to the end-users. DCE provides security, directory, time, remote procedure calls, and files across computers running on a network.

distributed database management system (DDBMS). A system for distributing a database and its control system across many geographically dispersed machines.

Do Not Translate (DNT). A type of data source that must exist on the AS/400 because of BLOB restrictions.

double–byte character set (DBCS). A method of representing some characters using one byte and other characters using two bytes. Double-byte character sets are necessary to represent some characters in the a Japanese, Korean, and Chinese languages.

double–byte enabled. A data storage feature that allows a computer to store ideographic characters from Asian languages. J.D. Edwards coding techniques accommodate both ideographic and alphabetic characters, making it easier to translate an application into another language.

driver. A program or portion of a program that controls the transfer of data from an input or output device.

duplicated database. A decision support database that contains a straightforward copy of operational data. The advantages involve improved performance for both operational and reporting environments. See also enhanced analysis database, enterprise data warehouse.

dynamic link library (DLL). A set of program modules that are designed to be invoked from executable files when the executable files are run, without having to be linked to the executable files. They typically contain commonly used functions.

dynamic partitioning. The ability to dynamically distribute logic or data to multiple tiers in a client/server architecture.

Electronic Data Interchange (EDI). The paperless, computer-to-computer exchange of business transactions, such as purchase orders and invoices, in a standard format with standard content.

embedded event rule. An event rule that is specific to a particular table or application. Examples include form-to-form calls, hiding a field based on a processing option value, and calling a business function. Contrast with business function event rule. See also event rule.

Employee Work Center. This is a central location for sending and receiving all OneWorld messages (system and user generated) regardless of the originating application or user. Each user has a mailbox that contains workflow and other messages, including Active Messages. With respect to workflow, the Message Center is MAPI compliant and supports drag and drop work reassignment, escalation, forward and reply, and workflow monitoring. All messages from the message center can be viewed through OneWorld messages or Microsoft Exchange.

encapsulation. The ability to confine access to and manipulation of data within an object to the procedures that contribute to the definition of that object.

end user. An individual who uses OneWorld software.

enhanced analysis database. A database containing a subset of operational data. The data on the enhanced analysis database performs calculations and provides summary data to speed generation of

reports and query response times. This solution is appropriate when external data must be added to source data, or when historical data is necessary for trend analysis or regulatory reporting. See also duplicated database, enterprise data warehouse.

enterprise. Every server, PC, and database that is on an organization's network.

enterprise data warehouse. A complex solution that involves data from many areas of the enterprise. This environment requires a large relational database (the data warehouse) that is a central repository of enterprise data, which is clean, reconciled, and consolidated. From this repository, data marts retrieve data to provide department-level decisions. See also duplicated database, enhanced analysis database.

enterprise server. A database server and logic server. See database server. Also referred to as host.

Enterprise Workflow Management. A OneWorld system that provides a way of automating tasks, such as notifying a manager that a requisition is waiting for approval, using an e-mail-based process flow across a network.

environment. A path code with a set of Object Configuration Manager (OCM) mappings that allow a user to locate data and a specific set of objects. Examples include Conference Room Pilot (CRP), development, production, and pristine.

Environment Checker. An application you can run before installing or upgrading OneWorld to diagnose configuration and setup issues that may exist at the operating system level.

Environment Workbench. During the Installation Workbench process, Environment Workbench copies the environment information and Object Configuration Manager tables for each environment from the Planner data source to the System release number data source. It also updates the Environment Plan detail record to reflect completion.

Ethernet. A commonly used, shared media LAN technology, which broadcasts messages to all nodes on the network segment. Ethernet connects up to 1,024 nodes at 10MB per second over twisted pair cable, coaxial cable, and optical fiber.

event. An action that occurs when an interactive or batch application is running. Example events are tabbing out of an edit control, clicking a push button, initializing a form, or performing a page break on a report. The GUI operating system uses

miniprograms to manage user activities within a form. Additional logic can be attached to these miniprograms and used to give greater functionality to any event within a OneWorld application or report using event rules.

event rule. Used to create complex business logic without the difficult syntax that comes with many programming languages. These logic statements can be attached to applications or database events and are executed when the defined event occurs, such as entering a form, selecting a menu bar option, page breaking on a report, or selecting a record. An event rule can validate data, send a message to a user, call a business function, as well as many other actions. There are two types of event rules:

1   Embedded event rules.
2   Business function event rules.

executable file.

A computer program that can be run from the computer's operating system. Equivalent terms are "application" and "program.".

facility. An entity within a business for which you want to track costs. For example, a facility might be a warehouse location, job, project, work center, or branch/plant. Sometimes referred to as a business unit.

field. 1) An area on a form that represents a particular type of information, such as name, document type, or amount. 2) A defined area within a record that contains a specific piece of information. For example, a supplier record consists of the fields Supplier Name, Address, and Telephone Number.

file. A set of information stored under one name. See also table.

file transfer protocol (FTP). A set of TCP/IP commands used to log on to a network, list directories, and copy files. FTP is also a communications protocol used to transmit files without data loss.

find/browse. A type of form used to:

1   Search, view, and select multiple records in a detail area.
2   Delete records.
3   Exit to another form.
4   Serve as an entry point for most applications.

firewall.

A set of technologies that allows an enterprise to test, filter, and route all incoming messages. Firewalls are used to keep an enterprise secure.

fix/inspect. A type of form used to view, add, or modify existing records. A fix/inspect form has no detail area.

form. The element of the OneWorld graphical user interface by which the user exchanges data with interactive applications. Forms are made up of controls, such as fields, options, and the grid. These controls allow the user to retrieve information, add and revise information, and navigate through an application to accomplish a task.

Form Design Aid (FDA). The OneWorld GUI development tool for building interactive applications and forms.

form interconnection. Allows one form to access and pass data to another form. Form interconnections can be attached to any event; however, they are normally used when a button is clicked.

form type. The following form types are available in OneWorld:

1   Find/browse.
2   Fix/inspect.
3   Header detail.
4   Headerless detail.
5   Message.
6   Parent/child.
7   Search/select.

fourth generation language (4GL).

A programming language that focuses on what you need to do and then determines how to do it. Structured Query Language is an example of a 4GL.

general release. See release.

generic text structures. See Media Storage Objects.

graphical user interface (GUI). A computer interface that is graphically based as opposed to being character-based. An example of a character-based interface is that of the AS/400. An example of a GUI is Microsoft Windows. Graphically based interfaces allow pictures and other graphic images to be used in order to give people clues on how to operate the computer.

grid. A control that displays detail information on a form. The grid is arranged into rows, which generally represent records of data, and columns,

which generally represent fields of the record. See also detail area.

header. Information at the beginning of a table or form. Header information is used to identify or provide control information for the group of records that follows.

header detail. A type of form used to add, modify, or delete records from two different tables. The tables usually have a parent/child relationship.

headerless detail. A type of form used to work with multiple records in a detail area. The detail area is capable of of receiving input.

host. In the centralized computer model, a large timesharing computer system that terminals communicate with and rely on for processing. It contrasts with client/server in that those users work at computers that perform much of their own processing and access servers that provide services such as file management, security, and printer management.

hypertext markup language (HTML). A markup language used to specify the logical structure of a document rather than the physical layout. Specifying logical structure makes any HTML document platform independent. You can view an HTML document on any desktop capable of supporting a browser. HTML can include active links to other HTML documents anywhere on the Internet or on intranet sites.

index. Represents both an ordering of values and a uniqueness of values that provide efficient access to data in rows of a table. An index is made up of one or more columns in the table.

inheritance. The ability of a class to recieve all or parts of the data and procedure definitions from a parent class. Inheritance enhances developement through the reuse of classes and their related code.

install. To load a full or partial set of OneWorld software on a machine that has existing or nonexisting OneWorld software, such as install OneWorld for the 0first time, install an upgrade, or install an update.

installation. The process of putting OneWorld software on your computer for the first time. An example of an installation is B73.2. As in OneWorld Installation Guide.

Installation Planner. OneWorld program that runs on the deployment server as a system administration tool. Installation Planner guides you through the installation setup process, including defining the enterprise server and deployment platform information, setting up environments, and defining data sources.

Installation Workbench. OneWorld system administration program that allocates and configures software and resources on servers and workstations according to the plan you created in Installation Planner.

installer. The person who can perform most tasks and processes during a OneWorld installation, upgrade, or update.

integrated toolset. Unique to OneWorld is an industrial-strength toolset embedded in the already comprehensive business applications. This toolset is the same toolset used by J.D. Edwards to build OneWorld interactive and batch applications. Much more than a development environment, however, the OneWorld integrated toolset handles reporting and other batch processes, change management, and basic data warehousing facilities.

integration. A situation in which J.D. Edwards software and the software of another company access the same database.

integrity test. A process used to supplement a company's internal balancing procedures by locating and reporting balancing problems and data inconsistencies.

interactive processing. Processing actions that occur in response to commands that you enter directly into the system. During interactive processing, you are in direct communication with the system, and it might prompt you for additional information while processing your request. Contrast with batch processing.

interactive processing. A job the computer performs in response to a command. During interactive processing, the user communicates directly with the computer, which may prompt the user to input additional information during the processing of a request.

Internet. The worldwide constellation of servers, applications, and information available to a desktop client through a phone line or other type of remote access.

Internet address. A specified path used to send and receive messages on the Internet. The parts of the address identify the contact, company, and type of business.

interoperability. The ability of different computer systems, networks, operating systems, and applications to work together and share information.

intranet. A small version of the Internet usually confined to one company or organization. An intranet uses the functionality of the Internet and places it at the disposal of a single enterprise.

IP. A connectionless communication protocol that by itself provides a datagram service. Datagrams are self-contained packets of information that are forwarded by routers based on their address and the routing table information contained in the routers. Every node on a TCP/IP network requires an address that identifies both a network and a local host or node on the network. In most cases the network administrator sets up these addresses when installing new workstations. In some cases, however, it is possible for a workstation, when booting up, to query a server for a dynamically assigned address.

IServer Service. Developed by J.D. Edwards, this Internet server service resides on the Web server, and is used to speed up delivery of the Java class files from the database to the client.

J.D. Edwards Database. See JDEBASE Database Middleware.

Java. An Internet executable language that, like C, is designed to be highly portable across platforms. This programming language was developed by Sun Microsystems. Applets, or Java applications, can be accessed from a Web browser and executed at the client, provided that the operating system or browser is Java-enabled. (Java is often described as a scaled-down C++). Java applications are platform independent.

Java application server. A server through which a user can interact with OneWorld applications using a Web browser.

Java Database Connectivity (JDBC). The standard way to access Java databases, set by Sun Microsystems. This standard allows you to use any JDBC driver database.

JDBNET. A database driver that allows heterogeneous servers to access each other's data.

jde.ini. J.D. Edwards file (or member for AS/400) that provides the runtime settings required for OneWorld initialization. Specific versions of the file/member must reside on every machine running OneWorld. This includes workstations and servers.

JDE.LOG. The main diagnostic log file of OneWorld. Always located in the root directory on the primary drive. Contains status and error messages from the startup and operation of OneWorld.

JDEBASE Database Middleware. J.D. Edwards proprietary database middleware package that provides two primary benefits:
1. Platform-independent APIs for multidatabase access. These APIs are used in two ways:
   a. By the interactive and batch engines to dynamically generate platform-specific SQL, depending on the data source request.
   b. As open APIs for advanced C business function writing. These APIs are then used by the engines to dynamically generate platform-specific SQL.
2. Client-to-server and server-to-server database access. To accomplish this OneWorld is integrated with a variety of third-party database drivers, such as Client Access 400 and open database connectivity (ODBC).

JDECallObject. An application programming interface used by business functions to invoke other business functions.

JDEIPC. Communications programming tools used by server code to regulate access to the same data in multiprocess environments, communicate and coordinate between processes, and create new processes.

JDENET communications middleware. J.D. Edwards proprietary communications middleware package for OneWorld. It is a peer-to-peer, message-based, socket based, multiprocess communications middleware solution. It handles client-to-server and server-to-server communications for all OneWorld supported platforms.

job. A single identifiable set of processing actions that user directs the computer to perform. Jobs are initiated by selecting menu options, entering commands, or pressing designated function keys.

job queue. A group of jobs waiting to be batch processed. See also batch processing.

just in time installation (JITI). OneWorld's method of dynamically replicating objects from the central object location to a workstation.

just in time replication (JITR). OneWorld's method of replicating data to individual workstations. OneWorld replicates new records (inserts) only at the time the user needs the data. Changes, deletes, and updates must be replicated using Pull Replication.

landscape. A printer orientation for a page with greater width than height. Contrast with portrait.

language preference code. An abbreviation that identifies the preferred language to be used for the text for online and printed output. This code is used in the user profile to designate the user's preferred language(s).

local area network (LAN). A short distance network consisting of workstations, servers, a NOS, and a communications link. It is distinguished by the absence of telecommunications service.

location. The method by which OneWorld manages the organizational entities within an enterprise. The differentiation between locations can be physical (for example, New York and Tokyo) or virtual (for example, Headquarters and Accounting). A location is identified by a three-character location code, which is set up during OneWorld installation.

Location Workbench. During the Installation Workbench process, Location Workbench copies all locations that are defined in the installation plan from the Location Master table in the Planner data source to the System data source.

log files. Files that track operations for a process or application. Reviewing log files is helpful for troubleshooting problems. The file extension for log files is .LOG.

master table. A database table used to store data and information that is permanent and necessary to the system's operation. Master tables might contain data, such as paid tax amounts, supplier names, addresses, employee information, and job information.

media storage objects. Files that use one of the following naming conventions that are not organized into table format: Gxxx, xxxGT or GTxxx.

menu masking. A security feature that lets you prevent individual users from accessing specified menus or menu selections.

menu merge. A process that blends a customer's modifications to the menu tables with the data that accompanies a new release.

merge. A OneWorld process that takes a customer's custom modifications and blends them into the data that accompanies a new release.

Messaging Application Programming Interface (MAPI). An architecture that defines the components of a messaging system and how they behave. It also defines the interface between the messaging system and the components.

middleware. A general term that covers all the distributed software needed to support interactions between clients and servers. Think of it as the software that's in the middle of the client/server system or the "glue" that lets the client obtain a service from a server.

modal. A restrictive or limiting interaction created by a given condition of operation. Modal often describes a secondary window that restricts a user's interaction with other windows. A secondary window can be modal with respect to it's primary window or to the entire system. A modal dialog box must be closed by the user before the application continues.

modeless. Not restricting or limiting interaction. Modeless often describes a secondary window that does not restrict a user's interaction with other windows. A modeless dialog box stays on the screen and is available for use at any time but also permits other user activities.

multitier architecture. A client/server architecture that allows multiple levels of processing. A tier defines the number of computers that can be used to complete some defined task.

named event rules (NER). Also called business function event rules. Encapsulated, reusable business logic created using event rules, rather than C programming.

National Language Support (NLS). Mechanisms provided to facilitate internationalization of both system and application user interfaces.

network addresses. A unique position assigned to a node operating in a network that other nodes use when communicating with it. For Ethernet and Token Ring network adapters, unique addresses are assigned at the factory and consist of a 6-byte address. Half of this address identifies the board's manufacturer, while the last half is unique to the board and is assigned when the board is manufactured. Communication errors are prevented, because no two Ethernet or Token Ring NICs will have identical addresses.

network computer. As opposed to the personal computer, the network computer offers (in theory) lower cost of purchase and ownership and less complexity. Basically, it is a scaled-down PC (very little memory or disk space) that can be used to access network-based applications (Java applets, ActiveX controls) via a network browser.

network computing. Often referred to as the next phase of computing after client/server. While its exact definition remains obscure, it generally encompasses issues such as transparent access to computing resources, browser-style front-ends, platform independence, and other similar concepts.

next numbers. A feature used to control the automatic numbering of items such as new G/L accounts, vouchers, and addresses. Next numbers provides a method of incrementing numbers.

node. A termination point for two or more communications links. A node can serve as the control location for forwarding data among the elements of a network or multiple networks, as well as perform other networking and, in some cases, local processing.

normalized. In database management, normalization applies a body of techniques to a relational database in order to minimize the inclusion of duplicate information. Normalization significantly simplifies query and update management, including security and integrity considerations.

numeric characters. Digits 0 through 9 that are used to represent data. Contrast with alphanumeric characters.

object. A self-sufficient entity that contains data as well as the structures and functions used to manipulate the data. For OneWorld purposes, an object is a reusable entity that is based on software specifications created by the OneWorld toolset. See also Object Librarian.

Object Configuration Manager (OCM). OneWorld's object request broker and the control center for the runtime environment. It keeps track of the runtime locations for business functions, data, and batch applications. When one of these objects is called, the Object Configuration Manager directs access to it using defaults and overrides for a given environment and user.

object embedding. When an object is embedded in another document, an association is maintained between the object and the application that created

it; however, any changes made to the object are also only kept in the compound document. See also object linking.

Object Librarian. A repository of all versions, applications, and business functions reusable in building applications. It provides check-out and check-in capabilities for developers, and it controls the creation, modification, and use of OneWorld objects. The Object Librarian supports multiple environments (such as production and development) and allows objects to be easily moved from one environment to another.

Object Librarian merge. A process that blends any modifications to the Object Librarian in a previous release into the Object Librarian in a new release.

object linking. When an object is linked to another document, a reference is created with the file the object is stored in, as well as with the application that created it. When the object is modified, either from the compound document or directly through the file it is saved in, the change is reflected in that application as well as anywhere it has been linked. See also object embedding.

object linking and embedding (OLE). A way to integrate objects from diverse applications, such as graphics, charts, spreadsheets, text, or an audio clip from a sound program. See also object embedding, object linking.

object-based technology (OBT). A technology that supports some of the main principles of object-oriented technology: classes, polymorphism, inheritance, or encapsulation.

object-oriented technology (OOT). Brings software development past procedural programming into a world of reusable programming that simplifies development of applications. Object orientation is based on the following principles: classes, polymorphism, inheritance, and encapsulation.

OneWorld. A combined suite of comprehensive, mission-critical business applications and an embedded toolset for configuring those applications to unique business and technology requirements. OneWorld is built on the Configurable Network Computing technology, J.D. Edwards' own application architecture, which extends client/server functionality to new levels of configurability, adaptability, and stability.

OneWorld application. Interactive or batch processes that execute the business functionality of OneWorld. They consist of reusable business

functions and associated data that are platform independent and can be dynamically configured across a TCP/IP network.

OneWorld object. A reusable piece of code that is used to build applications. Object types include tables, forms, business functions, data dictionary items, batch processes, business views, event rules, versions, data structures, and media objects. See also object.

OneWorld process. Allows OneWorld clients and servers to handle processing requests and execute transactions. A client runs one process, and servers can have multiple instances of a process. OneWorld processes can also be dedicated to specific tasks (for example, workflow messages and data replication) to ensure that critical processes don't have to wait if the server is particularly busy.

OneWorld Web development computer. A standard OneWorld Windows developer computer with the additional components installed:

- Sun's JDK 1.1.
- JFC (0.5.1).
- Generator Package with Generator.Java and JDECOM.dll.
- R2 with interpretive and apllication controls/form.

open database connectivity (ODBC). Defines a standard interface for different technologies to process data between applications and different data sources. The ODBC interface is made up of a set of function calls, methods of connectivity, and representation of data types that define access to data sources.

Open Systems Interconnection (OSI). The OSI model was developed by the International Standards Organization (ISO) in the early 1980s. It defines protocols and standards for the interconnection of computers and network equipment.

operating system (OS). The software that runs on the hardware. For example, AIX 4.1 is a version of an operating system.

Oracle. A relational DBMS from Oracle. Runs on a broad variety of computers, which allows data to be entered and maintained on multiple hardware platforms.

output queue. See print queue.

package. OneWorld objects are installed to workstations in packages from the deployment server. A package can be compared to a bill of material or kit that indicates the necessary objects

for that workstation and where on the deployment server the installation program can find them. It is a point-in-time "snap shot" of the central objects on the deployment server.

package location. The directory structure location for the package and its set of replicated objects. This is usually \\deployment server\release\path_code\package\ package name. The subdirectories under this path are where the replicated objects for the package will be placed. This is also referred to as where the package is built or stored.

Package Workbench. During the Installation Workbench process, Package Workbench transfers the package information tables from the Planner data source to the System - release number data source. It also updates the Package Plan detail record to reflect completion.

parallel release. A configuration of OneWorld software that lets multiple release or update levels run in separate environments on the same machine for testing, training, or development purposes. For release levels running in parallel, no tables or data are shared. For cumulative update levels running in parallel, system and server map data are shared.

parameter. A number, code, or character string you specify in association with a command or program. The computer uses parameters as additional input or to control the actions of the command or program.

parent/child form. A type of form that presents parent/child relationships in an application on one form. The left portion of the form presents a tree view that displays a visual representation of a parent/child relationship. The right portion of the form displays a detail area in browse mode. The detail area displays the records for the child item in the tree. The parent/child form supports drag and drop functionality.

partitioning. A technique for distributing data to local and remote sites to place data closer to the users who access. Portions of data can be copied to different database management systems.

path code. A pointer to a specific set of objects. A path code is used to locate:

1. Central objects.
2. Replicated objects.

plan. Refers to an installation plan. A plan is the standard means for installing, upgrading, or updating a OneWorld configuration. Plans, which are used in various phases of installation, contain

information about data sources you will use, environments you will install, and packages.

planner environment. A OneWorld environment in which you prepare the main components of a OneWorld configuration.

platform. The hardware, operating system, and database on which your software is operating, for example, an HP 9000 processor using HP-UX as the operating system and Oracle as the database.

platform independence. A benefit of open systems and Configurable Network Computing. Applications that are composed of a single code base can be run across a TCP/IP network consisting of various server platforms and SQL databases.

polymorphism. A principle of object-oriented technology in which a single mnemonic name can be used to perform similar operations on software objects of different types.

port number. A numeric code that identifies a unique process for which a service can be provided on a machine.

portability. Allows the same application to run on different operating systems and hardware platforms.

portrait. The default printer orientation for a page with greater height than width. Contrast with landscape.

primary key. A column or combination of columns that uniquely identifies each row in a table.

print queue. A list of tables, such as reports, that you have submitted to be written to an output device, such as a printer. The computer spools the tables until it writes them. After the computer writes the table, the system removes the table identifier from the print queue.

pristine environment. A OneWorld environment used to test unaltered objects with J.D. Edwards demonstration data or for training classes. You must have this environment so you can compare pristine objects that you modify.

process. A complete unit of work with a defined start and end, which a computer performs. Some operating systems, such as Windows NT, HP-UX, and AIX, track processes by assigning identifiers to them. In Windows NT, a process is a running instance of an executable file.

processing option. A feature that allows you to direct the functions of a program. For example, processing options allow you to specify defaults for

certain forms, control the format in which information prints on reports, and change how information appears on a form or in a report.

production environment. A OneWorld environment in which users operate OneWorld software.

protocol. A set of formalized rules specifying how hardware and software on a network should interact when transmitting and receiving information.

published table. Also called a "Master" table, this is the central copy to be replicated to other machines. Resides on the "publisher" machine. the Data Replication Publisher Table (F98DRPUB) identifies all of the published tables and their associated publishers in the enterprise.

publisher. The server that is responsible for the published table. The Data Replication Publisher Table (F98DRPUB) identifies all of the published tables and their associated publishers in the enterprise.

pull replication. One of the OneWorld methods for replicating data to individual workstations. Such machines are set up as pull subscribers using OneWorld's data replication tools. The only time pull subscribers are notified of changes, updates, and deletions is when they request such information. The request is in the form of a message that is sent, usually at startup, from the pull subscriber to the server machine that stores the Data Replication Pending Change Notification table (F98DRPCN).

purge. The process of removing records or data from a system table.

push. Technology used to force information from a centralized server to another server or client.

push installation. A process that allows a system administrator to schedule the automatic installation of OneWorld on workstations.

push replication. A server-to-server method of data replication that notifies subscriber machines when a change is made to the publisher table. If the subscriber machine is not running when the notification is sent, the subscriber receives the message at startup.

query by example (QBE). Located at the top of a detail area, it is used to search for data to be displayed in the detail area.

queue. A stored arrangement of computer data or program waiting to be processed in the order in

which they were submitted. A queue may refer to a print queue, job queue, or message queue.

record. A collection of related, consecutive fields of data that the system treats as a single unit of information.

redundancy. Storing exact copies of data in multiple databases.

referential integrity. Ensures that a parent record cannot be deleted from the database when a child record for exists.

refresh. To modify OneWorld software, or subset of it, such as a table or business data, so that it functions at a new release or cumulative update level, such as B73.2 or B73.2.1.

regenerable. Source code for OneWorld business functions can be regenerated from specifications (business function names). Regeneration occurs whenever an application is recompiled, either for a new platform or when new functionality is added.

relationship. Links tables together and facilitates joining business views for use in an application or report. Relationships are created based on indexes.

release. A release of OneWorld regardless of any updates that might be applied. For example, the term Release B73.2 refers generically to B73.2, B73.2.1, and B73.2.2. Sometimes referred to as a general release. See also base release, release level.

release level. A specific level of OneWorld software. A release level is achieved by installing a base release and applying one or more updates. A release level also can be installed directly. See also base release, release.

release/release update. A "release" contains major new functionality, and a "release update" contains an accumulation of fixes and performance enhancements, but no new functionality.

replicated object. A copy or replicated set of the central objects must reside on each client and server that run OneWorld. The path code indicates the directory where these objects are located.

replication. A copy of an object, usually a table in a relational database, which is placed in another location. As part of replication, the object may undergo a transformation from one type of table, such as an Oracle table, to another, such as a TAM file on a client machine.

Report Design Aid (RDA). The OneWorld GUI tool for operating, modifying and copying report batch applications.

retrofitting. The process of integrating a customer's modifications into a new release of OneWorld.

rollback. A process which changes data back to a previous state after it has been committed to a database.

runtime objects. Packages of objects that are deployed to any machine that will run OneWorld.

scalability. Allows software, architecture, network, or hardware growth that will support software as it grows in size or resource requirements. The ability to reach higher levels of performance by adding microprocessors.

scripts. A collection of SQL statements that perform a specific task.

search/select. A type of form used to search for a value and return it to the calling field.

security server. A dispatched kernel process running on a server for security validation. A security server protects computer resources using security applications and redundant functionality.

server. Provides the essential functions for furnishings services to network users (or clients) and provides management functions for network administrators. Some of these functions are storage of user programs and data and management functions for the file systems. It may not be possible for one server to support all users with the required services. Some examples of dedicated servers that handle specific tasks are backup and archive servers, application and database servers.

Server Administration Workbench. A OneWorld application that provides the server administrator with vital statistics about the internal functions of OneWorld.

Server Workbench. During the Installation Workbench process, Server Workbench copies the server configuration files from the Planner data source to the System release number data source. It also updates the Server Plan detail record to reflect completion.

service. A type of Microsoft Windows NT process that does not require anyone to be logged on to the operating system. Examples are jdesnet.exe and jdesque.exe.

servlet. Servlets provide a Java-based solution used to address the problems currently associated with doing server-side programming, including inextensible scripting solutions. Servlets are objects that conform to a specific interface that can be plugged into a Java-based server. Servlets are to the server what applets are to the client.

single–byte character set (SBCS). An encoding scheme in which each alphabetic character is represented by one byte. Most Western languages, such as English can be represented using a single-byte character set.

socket. A communications end point through which an application sends or receives packets of data across a network. Also known as Berkley Socket, developed by the University of California at Berkley.

software action request (SAR). An entry in the AS/400 database used for requesting modifications to J.D. Edwards software.

Specification merge. The Specification merge is comprised of three merges: Object Librarian merge, Versions List merge, and Central Objects merge. The merges blend customer modifications with data that accompanies a new release.

Specification Table Merge Workbench. During the Installation Workbench process, Specification Table Merge Workbench runs the batch applications that update the specification tables.

specifications. A complete description of a OneWorld object. Each object has its own specification, or name, which is used to build applications.

specifications. A description of a OneWorld object, such as a table's width and depth, placement of fields, and fonts used.

spool. The function by which the system stores generated output to await processing.

static text. Short, descriptive text that appears next to a control variable or field. When the variable or field is enabled, the static text is black; when the variable or field is disabled, the static text is gray.

store-and-forward. A transaction method that allows a client application to perform work and, at a later time, complete that work by connecting to a server application. This often involves uploading data residing on a client to a server. See also batch-of-one immediate, direct connect.

structured query language (SQL). A fourth generation language used as an industry standard for relational database access. It can be used to create databases and to retrieve, add, modify, or deleta data from databases. SQL is not a complete programming language because it does not contain control flow logic.

subscriber. The server that is responsible for the replicated copy of a published table. Such servers are identified in the Subscriber Table.

subscriber table. The Subscriber table (F98DRSUB), which is stored on the Publisher Server with the Data Replication Publisher table (F98DRPUB) identifies all of the subscriber machines for each published table.

summary. The presentation of data or information in a cumulative or totaled manner in which most of the details have been removed. Many systems offer forms and reports that summarize information stored in certain tables. Contrast with detail.

synchronous. A method of running processes in which one process must finish before the next one can begin.

system. A group of related applications identified by a name and a system code. For example, the Address Book system code is 01. All applications, tables, and menus within a system can be identified by the system code.

system administrator. The person who has access to perform tasks such as issue signon names or maintain security.

system code. A code that identifies a system, for example, 01 for the Address Book system and 31 for the Shop Floor Management system.

system function. A program module, provided by OneWorld, available to applications and reports for further processing.

table. In database environments, a two-dimensional entity made up of rows and columns. All physical data in a database are stored in tables. See also file.

table. A two-dimensional entity made up of rows and columns. All physical data in a database are stored in tables. A row in a table contains a record of related information. An example would be a record in an Employee table containing the Name, Address, Phone Number, Age, and Salary of an employee. Name is an example of a column in the employee table.

table. A file in OneWorld software.

table access management (TAM). The OneWorld component that handles the storage and retrieval of user defined data. TAM stores information such as data dictionary definitions; application and report specifications; event rules; table definitions; business function input parameters and library information; and data structure definitions for running applications, reports, and business functions.

table conversion. During an upgrade or update, this process changes OneWorld technical and application tables to the format for the new release.

Table Conversion Workbench. During the Installation Workbench process, Table Conversion Workbench runs the table conversions that change the technical and application tables to the format for the new release of OneWorld. It also updates the Table Conversions and Controls detail records to reflect completion.

Table Design Aid (TDA). A OneWorld GUI tool for creating, modifying, copying, and printing database tables.

table event rules. Use table event rules to attach database triggers (or programs) that automatically run whenever an action occurs against the table. An action against a table is referred to as an event. When you create a OneWorld database trigger, you must first determine which event will activate the trigger. Then, use Event Rules Design to create the trigger. Although OneWorld allows event rules to be attached to application events, this functionality is application specific. Table event rules provide embedded logic at the table level.

TCP/IP. Transmission Control Protocol/Internet Protocol. The original TCP protocol was developed as a way to interconnect networks using many different types of transmission methods. TCP provides a way to establish a connection between end systems for the reliable delivery of messages and data.

TCP/IP services port. Used by a particular server application to provide whatever service the server is designed to provide. The port number must be readily known so that an application programmer can request it by name.

technical data. A type of OneWorld data source that contains information about how OneWorld operates.

technical tables. Tables used for technical processes such as installation and upgrade of OneWorld, in contrast with tables used by applications.

Telnet. A terminal emulation protocol frequently used on the Internet that allows a user to log on and run a program from a remote computer. Telnet is part of the TCP/IP communications.

test environment. A OneWorld environment used along with the Conference Room Pilot environment to test OneWorld software or the modifications made in the development path code before you release changes to the end user.

third generation language (3GL). A programming language that requires detailed information about how to complete a task. Examples of 3GLs are COBOL, C, Pascal and FORTRAN.

third–party. Describes other software that is used in conjunction with J.D. Edwards software.

token. A bit configuration circulated among workstations, which lets workstation send data to the network.

token ring. A LAN access mechanism in which all stations attached to a bus wait for a broadcast token to be passed to them before they are able to transmit. However, though token-passing technology is in a physical ring, the next receiving station might not be the next physical station.

TP monitor. Transaction Processing monitor. A monitor that controls data transfer between local and remote terminals and the applications that originated them. TP monitors also protect data integrity in the distributed environment and may include programs that validate data and format terminal screens.

trace. A process that helps the user troubleshoot problems.

trigger. Allow you to attach default processing to a data item in the data dictionary. When that data item is used on an application or report, the trigger is invoked by an event associated with the data item. OneWorld also has three visual assist triggers: calculator, calendar and search form.

typical installation. One of the two types of installations you can set up in the Installation Planner application. A typical installation is the quickest way to create an installation plan, because it uses all of the J.D. Edwards default information for environment and data sources. See also custom installation.

uniform resource locator (URL). Names the address of a document on the Internet or an intranet. The following is an example of URL:http://www.jdedwards.com. This is J.D. Edwards Internet address.

unnormalized. Data that is a random collection of data elements with repeating record groups scattered throughout. Also see Normalized.

update. The process of refreshing OneWorld software to a new release level, such as from B73.2 to B73.3.

upgrade. The process of refreshing OneWorld software to a new release level, such as from B73.2 to B73.3.

user. An individual who uses OneWorld software.

user defined code (UDC). A code that users can define, assign code descriptions, and assign valid values. Examples of such codes are unit-of-measure codes, state names, and employee type codes.

user defined code type. The identifier for a table of codes with a meaning that you define for the system, such as ST for the Search Type codes table in Address Book. OneWorld provides a number of these tables and allows you to create and define tables of your own.

User Defined Codes merge. The User Defined Codes merge blends a customer's modifications to the user defined code tables with the data that accompanies a new release.

user display preferences. A set of values that represents a user's preferred language, date format, decimal format, and other country specific conventions.

User Overrides merge. The User Overrides merge adds new user override records into a customer's user override table.

user profile. The predefined characteristics required for each user. The user profile includes a library list, default print queue, and default job queue, as well as several other characteristics.

Versions List merge. The Versions List merge preserves any non-XJDE and non-ZJDE version specifications for objects that are valid in the new release as well as their processing options data.

visual assist. Forms that can be invoked from a control to assist the user in determining what data belongs in the control.

vocabulary overrides. A feature that you can use to override field, row, or column title text on forms and reports.

wchar_t. Internal type of a wide character. Used for writing portable programs for international markets.

Web client. Any workstation that contains an internet browser. The Web client communicates with the web server for OneWorld data.

Web server. Any workstation that contains the IServer service, SQL server, Java menus and applications, and Internet middleware. The Web server receives data from the web client, and passes the request to the enterprise server. When the enterprise server processes the information, it sends it back to the Web server, and the Web server sends it back to the Web client.

wide area network (WAN). A network that extends beyond an area served by the dedicated communication lines of a LAN and is capable of covering long distance. It is distinguished by the requirement that a phone company or telecommunications provider be part of the transmission.

workflow. According to the Workflow Management Coalition, worlflow means "the automation of a business process, in whole or part, during which documents, information, or tasks are passed from one participant to another for action, according to a set of procedural rules.".

workgroup server. A remote database server usually containing subsets of data replicated from a master database server. This server does not performance an application or batch processing. It may or may not have OneWorld running (in order to replicate data).

WorldSoftware Architecture. The broad spectrum of application design and programming technology that J.D. Edwards uses to achieve uniformity, consistency, and complete integration throughout its software.

Worldwide Web. A part of the Internet that can transmit text, graphics, audio, and video. The Worldwide Web allows clients to launch local or remote applications.

z file. For store and forward (network disconnected) user, OneWorld store-and-forward applications perform edits on static data and other critical information that must be valid to process an order. After the initial edits are complete, OneWorld stores

the transactions in work tables on the workstation. These work table are called Z files. When a network connection is established, Z files are uploaded to the enterprise server and the transactions are edited again by a master business function. The master business function will then update the records in your transaction files.

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