

JD Edwards World

Advanced Programming Concepts and Skills Guide

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Describes how to work with Version Control, Programming Tools, Programming Standards, Group Jobs, Universal File Converter, and Common & Production Library Files.

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Preface

Welcome to the JD Edwards World Advanced Programming Concepts and Skills Guide.

Audience

This guide is intended for implementers and end users of JD Edwards World Advanced Programming Concepts and Skills.

Documentation Accessibility

For information about Oracle's commitment to accessibility, visit the Oracle Accessibility Program website at

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Related Information

For additional information about JD Edwards World applications, features, content, and training, visit the JD Edwards World pages on the JD Edwards Resource Library located at:

<http://learnjde.com>

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Indicates cautionary information or terms defined in the glossary.
<i>italic</i>	Indicates book titles or emphasis.

Part I

Overview

This part contains these chapters

- [Chapter 1, "Overview to JD Edwards World Software"](#)
- [Chapter 2, "Overview to APCS System"](#)

Overview to JD Edwards World Software

This chapter contains these topics:

- [Section 1.1, "Application Development Cycle"](#)
- [Section 1.2, "Universal Building Blocks of JD Edwards World Software"](#)

1.1 Application Development Cycle

World Computer Aided Software Engineering (CASE) covers the entire spectrum of the application development life cycle, including design tools, code generation, automatic documentation generation, prototyping, repositories and other productivity improvement tools for the development, operation and maintenance of flexible, business application software.

You can describe the Application Development Cycle (A/D Cycle) in three levels, as follows:

1.1.1 Level 1

- The Application Platform, which is described in the Technical Foundation document.

1.1.2 Level 2

- The Design Platform, which is described in the Advanced Programming Concepts and Skills (APCS) document.

1.1.3 Level 3

- The Development Platform, which is described in the CASE document.

1.2 Universal Building Blocks of JD Edwards World Software

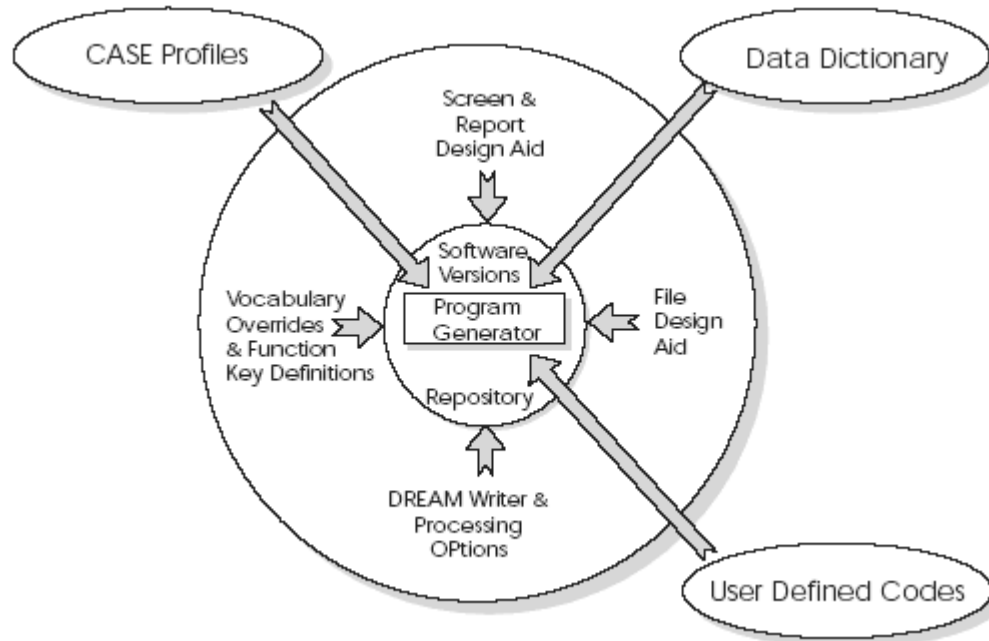
World CASE covers the entire spectrum of the application development life cycle, including:

- Design tools
- Code generation
- Automatic documentation generation
- Prototyping
- Repositories

- Other productivity improvement tools

The following figure shows the separate modules that contribute to the functioning of a JD Edwards World program.

Figure 1-1 JD Edwards World Program Modules



Overview to APCS System

This chapter contains this topic:

- [Section 2.1, "Features"](#)

2.1 Features

Advanced Programming Concepts and Skills (APCS) focuses on the following World CASE features:

- Data Dictionary Repository
- Project Management (Software Action Request System)
- CASE Profiles
- SAR Log Inquiry
- Creating a Development Environment
- Software Versions Repository
- Data Modeling
- File Design Aid
- Screen Design Aid
- Report Design Aid
- JD Edwards World Programming Standards
- File Servers and Functional Servers
- User Spaces and User Indexes
- Group Jobs
- Programming Modifications
- Source Debugger
- Programming Impacts from Software Upgrades

Note: Because this is a programming guide, and the majority of programmers do not use the Java interface, we are using non-Java (green screen) captures in this guide.

Part II

Version Control

This part contains these chapters:

- [Chapter 3, "Overview to Version Control"](#)
- [Chapter 4, "Development Environment"](#)
- [Chapter 5, "Project Management"](#)
- [Chapter 6, "Work with Software Action Requests"](#)
- [Chapter 7, "Work with Software Versions Repository"](#)
- [Chapter 8, "CASE Profiles"](#)
- [Chapter 9, "Working with SAR Log"](#)
- [Chapter 10, "Work with Promotion Paths and Projects"](#)
- [Chapter 11, "Promote a Project"](#)
- [Chapter 12, "Promote Project Updates"](#)

Overview to Version Control

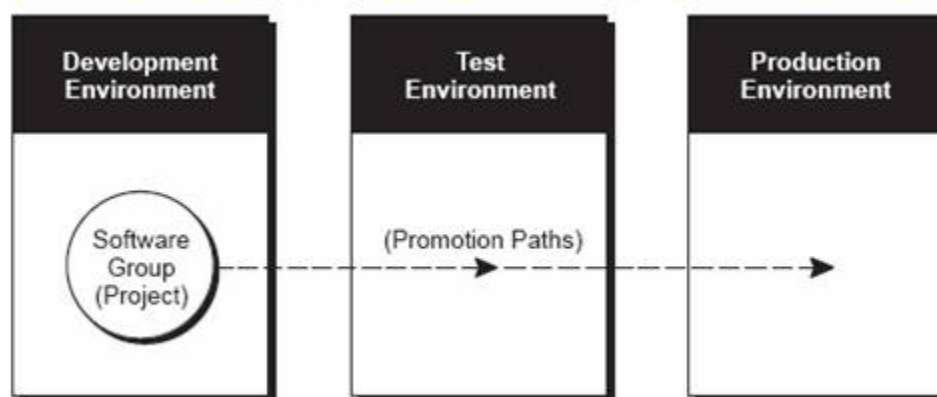
This chapter contains these topics:

- [Section 3.1, "About Version Control"](#)
- [Section 3.2, "Version Control Process Flow"](#)
- [Section 3.3, "Version Control Menu Overview"](#)

3.1 About Version Control

Use the JD Edwards World Version Control system to manage the movement of software between various environments, such as ones you have set up for software development, testing, and production.

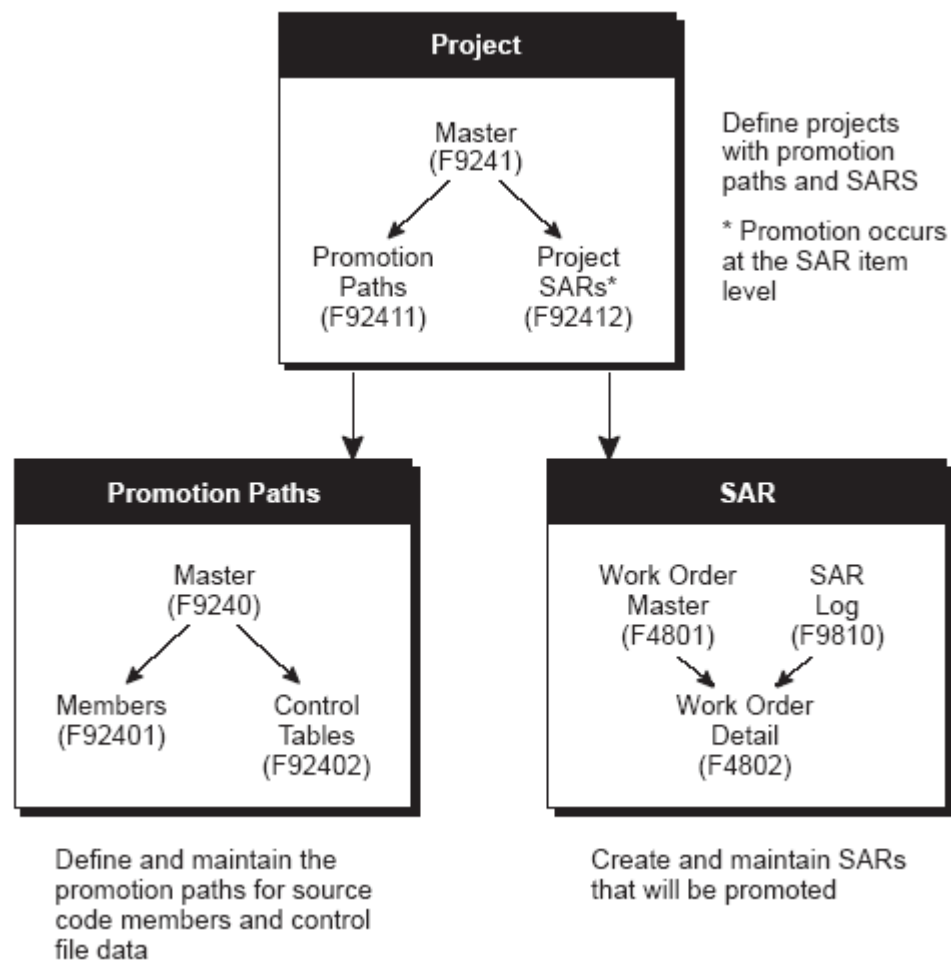
Figure 3–1 Various Software Environments



The Version Control system works with the Software Action Request (SAR) system and the SAR logging system. It performs three general functions:

- Groups source code members (such as RPG and CL programs, and physical and logical files) and control file data (such as Data Dictionary and menus) together as a project.
- Defines a promotion path, which specifies library information about the project's current environment and the environment to which it will be moved.
- Promotes the project from the current environment to the target environment as defined by the promotion path.

The following diagram shows how the version control process divides the tasks.

Figure 3–2 Version Control Process

To set up a software development project for development and promotion, you must:

- Create the SARs that you want to promote, and define promotion paths.
- Link the project to the SARs that are associated with it, and assign a promotion path to it.

All additions or changes you make to programs and control file data are logged in the SAR Log (F9810). Use this log to update the SARs, which are in the Work Order Detail table (F4802).

After you finish developing the software, you promote the software from the Project Elements form to the next environment.

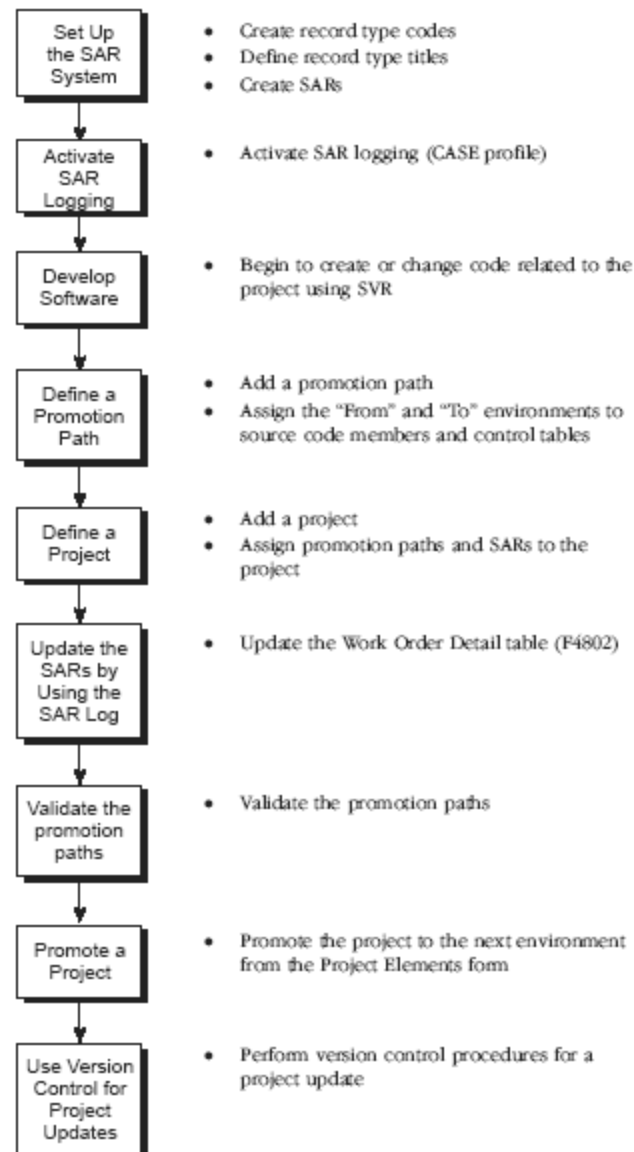
You will work with the following areas:

- Development Environment
- Project Management
- Work with Software Action Request
- Work with Software Versions Repository
- CASE Profiles
- Work with SAR Log

- Work with Promotion Paths and Projects
- Promote a Project
- Promote Project Updates

3.2 Version Control Process Flow

Figure 3–3 Version Control Process Flow



3.3 Version Control Menu Overview

The figure below is the Version Control Menu. From this form, you will access the different features of the software development and promotion process.

Figure 3–4 Version Control Menu screen

```
G9261                      J.D. Edwards & Company          JD ED
Daily Operation              Version Control

... BASIC OPERATIONS
2.  Software Versions Repository
3.  Manage Promotion Paths
4.  Manage Projects

... Double Byte Mandatory Options
7.  Analysis Process
8.  C9822 Conversion

... QA FUNCTIONS
11. Edit and Promote
12. Super SAR

... SETUP
14. Record Type Codes
15. Record Type Titles
16. CASE Profiles

... INQUIRIES
19. SAR Inquiry by Reference
20. Inquiry by SAR, Proj and Path

... PURGE DATA FILES
23. Purge SAR Log File

Selection or command
====>

Thur, Apr 10, 1996          A7.3 Development              LA5595234
8:55:51am                  (C) J.D.Edwards & Co 1985,1996      QPADEV0014
```

Development Environment

This chapter contains these topics:

- [Section 4.1, "About a Development Environment"](#)
- [Section 4.2, "JD Edwards World Libraries"](#)
- [Section 4.3, "Production and Development Examples"](#)
- [Section 4.4, "Creating Libraries"](#)
- [Section 4.5, "Creating a Development Source Library"](#)
- [Section 4.6, "About User Profiles"](#)
- [Section 4.7, "Defining Access for a User Profile using J98INITA"](#)
- [Section 4.8, "Copy Data to Your Development Environment"](#)

4.1 About a Development Environment

A development environment contains objects and data being tested and edited. It is different from your production environment because it should not contain any live data files.

4.1.1 Rules for Creating Development Environments

You should be aware of the following rules when you create development libraries:

- Do not begin library names with Q, JDF, or JD Edwards World because of IBM standards and the upgrade process.
- Create custom libraries for custom modifications.
- Library names should be a maximum of 9 characters in length because of the upgrade process.
- Do not use JDFDATA for your own test data or live data because of the upgrade process.
- Do not include JDFDATA in a live user's library list.

To create a Development Environment complete the following tasks:

- Create Libraries
- Define Access for a User Profile using J98INITA
- Define Access for a User Profile using J98INIT
- Copy Data to Your Development Environment

4.2 JD Edwards World Libraries

The following libraries are delivered with JD Edwards World software:

- Source Library (JDFSRC)
- Object Library (JDFOBJ)
- Data Library (JDFDATA)
- Install Library (JDEINSTAL)
- Plans Library (JDFINS)
- Security Library (CLTSEC) (Optional)

Source Library (JDFSRC)

This is the library that contains source code. Within the JDFSRC library, JD Edwards World has three multi-member source files. The source files and their contents are described below.

The file JDESRC contains the following source code:

- RPG Programs
- Printer files
- Display files
- CL Programs
- DDS for physical files
- DDS for logical files

The file JDECPY contains the source code for copy members.

The file F98CRTCMD contains pre-compiler commands.

- This is used to compile selected JD Edwards World programs.

Object Library (JDFOBJ) Libraries:source

The object library contains objects for your JD Edwards World software.

- RPG programs
- CL programs
- Display files
- Report files

Data Library (JDFDATA)

The data library contains data files for your JD Edwards World software (files in this library contain test data provided by JD Edwards World).

Install Library (JDEINSTAL)

The install library is used to install programs and software that upgrade JD Edwards World software.

Plans Library (JDFINS)

The library is used to plan how to upgrade JD Edwards World software.

Security Library (CLTSEC)

You can create a security library which is shared across all environments. The benefit of having a security library is that you enter a user profile only once to have access to any environment. The following files may exist in the security library:

- User library list (F0092)
- Library list control (F0093)
- Library list master (F0094)
- User Preference (F00921)

In addition, all logical files associated with the above files must also exist in the security library.

The World Technical Foundation manual states that a security library containing the F0092, F00921, F0093, F0094, and F0095 files can be used to minimize profile maintenance between JD Edwards World environments.

Note: There are many different security scenarios. For that reason, there is little documentation on the security library concept. This is just a discussion of how to use the Security library concept and is NOT a recommendation.

A security library makes most sense when J98INITA is the Initial Program on the IBM user profile. IBM object security may be necessary in addition to the JD Edwards World security options to complete the user security requirements.

1. The benefits of a security library are minimized if there is more than one. The maintenance and security tasks will have to be duplicated for each environment. If each environment has a different security scenario, a single security library should not be used. However, if separate security libraries are necessary, there will have to be a matching object library with the QJDF data area naming the security library in the User Profile Library field.
2. If the environments are not all at the same release (A73, A81, etc), the sign-on programs, the menu program, and the control files will all have to be at the highest release level.
3. If all the environments are at the same release level, other files besides the security files may be placed in the Security library for maintenance or control purposes (for example SVR, Function Key Security, Action code security). Any files in the Security library should apply to all environments and should not be found in any other user data library. The pristine JDFDATA library should still contain all the JD Edwards World files.
4. On an Upgrade Plan, the Security library should be specified as SEC type. The file duplication issues of paragraph 3 above must be emphasized. The Control File Sets in the Control File Dependencies appendix of the PTF Install Workbook should be maintained.

4.3 Production and Development Examples

There are many ways to set up a production and development environment. The following are some examples.

4.3.1 Basic Production Environment

Library	Description
QTEMP	IBM Temporary data files
CLTOBJ	Client's objects
JDFOBJ	JD Edwards World objects
CLTCOM	Client's common files
CLTDTA	Client's data files
CLTSEC	Client's security files
QGPL	IBM general public library

4.3.2 Basic Development Environment

Library	Explanation
QTEMP	IBM Temporary data files
DEVOBJ	Development objects
CLTOBJ	Client's objects
JDFOBJ	JD Edwards World objects
DEVCOM	Development common files
DEVDTA	Development data files
CLTSEC	Client's security files
DEVSRC	Development source files
CLTSRC	Client's source files
JDFSRC	JD Edwards World source files
QGPL	IBM general public library

All modifications and tests are performed in the development environment with the program's object and source residing in DEVOBJ and DEVSRC. After you complete the testing, the program's object is moved from DEVOBJ to CLTOBJ and the source is moved from DEVSRC to CLTSRC. You must create a separate data and common library (DEVDTA and DEVCOM) to ensure that any data changes during testing in the development environment do not affect live data in the production environment.

4.3.3 No Source in Production Environment and a Common Shared Library

Library	Explanation
QTEMP	IBM Temporary data files
CLTOBJ	Client's objects
JDFOBJ	JD Edwards World objects
CLTCOM	Client's common files
COMMON	Common (shared) files
CLTDTA	Client's data files

Library	Explanation
CLTSEC	Client's security files
QGPL	IBM general public library

4.3.4 Basic Development Environment with a Shared Common

Library	Explanation
QTEMP	IBM Temporary data files
DEVOBJ	Development objects
CLTOBJ	Client's objects
JDFOBJ	JD Edwards World objects
DEVCOM	Development common files
COMMON	Common (shared) files
DEVDTA	Development data files
CLTSEC	Client's security files
DEVSRC	Development source files
CLTSRC	Client's source files
JDFSRC	JD Edwards World source files
QGPL	IBM general public library

No source libraries exist in the production environment because source code is not necessary to run JD Edwards World programs. This makes the production environment easier to maintain. The only restriction is that users in the production environment cannot view source code. Another difference is that a third shared common library (COMMON) has been added to the environments. This library contains common files whose data may be changed during the testing process. For example, F98HELP may not be changed but the Vocabulary Overrides, Data Dictionary, User Defined Codes or other Control Files may be changed. By having this type of common library not only are the environments easy to maintain, but you save considerable machine resources.

4.3.5 One Development Source and Object Library

Library	Explanation
QTEMP	IBM Temporary data files
CLTMOD	Client's source and objects under modification
CLTOBJ	Client's objects
JDFOBJ	JD Edwards World objects
DEVCOM	Development common files
COMMON	Common unchanged files
DEVDTA	Development data files
CLTSEC	Client's security files

Library	Explanation
CLTSRC	Client's source files
JDFSRC	JD Edwards World source files
QGPL	IBM general public library

DEVOBJ and DEVSRC have been combined into one library called CLTMOD. This library contains both source code and compiled objects for programs while they are being modified and tested. After testing, the program objects are copied to CLTOBJ and source code is moved to CLTSRC. The purpose of having one object and source code library like CLTMOD is to aid in change management and simplify the development library list by having one place where all modifications and testing take place.

4.4 Creating Libraries

Create the following libraries:

- Common and data libraries
- Development object library
- Development source library

If you create a common library (DEVCOM), be sure to specify it each time you create another development environment. If you do not specify the common library each time, the files will be created in your development data library.

Your common library should contain control files holding data that is used in several environments that is not application data. These control files may be changed during the development process.

See [Appendix A, "Common & Production Library Files"](#) for a list of common and production files. Common files will be marked with a "Y" in the Common File field on the SVR screen. Files marked with an "N" in this field are Production files. If the data is to be copied from JDFDATA into either of these files, the SVR Copy Data Y/N field will be marked 'Y'.

4.4.1 Creating Common and Data Libraries

You will create the libraries that contain common data files (DEVCOM) and test data files (DEVDTA).

To create common and data libraries

Navigation

From Computer Operations (G96), choose Data Base Management

From Data Base Management (G9645), choose Data Libraries

On Create Production Environment

Figure 4–1 Create User Data Libraries screen

```

98312                Create User Data Libraries    Form ID. . . . P98102
                                                Version. . . . ZJDE0001
Create Production Environment
This job has various options described below. Enter the desired values and
press ENTER to continue.
Enter the "FROM" Library where data is
to be copied from (e.g. JDFDATA).                _____ JDFDATA
Enter the "TO" Production Library where
you are creating files (e.g. PRODLIB).            _____ DEVDTA
Enter the "TO" Common Library where you
are creating common files (e.g. COMMON).           _____ DEVCOM
If you do not enter a Common library
all common files will be created in the
Production Library.

F5=Printer Overrides

```

1. Complete the Create User Data Libraries form.
 - Once you correctly complete the form and press Enter, the job (J98102) is submitted to batch.
 2. Repeat the above step for each of the development data libraries you have.
- The program automatically:
- Creates your libraries
 - Creates the physical and logical files that should be maintained in your common library
 - Creates the physical and logical files necessary for operations control in your development library
 - Creates the physical and logical files for various applications in your development library
 - Generates reports to identify all the physical, logical, and join files created and to identify where they were created
 - Generates a report to identify all the optional files. The report explains why the files are optional so that you can determine if they should be deleted.

4.4.2 Creating a Development Object Library

To create a development object library

Type the IBM command Create Library (CRTLIB) and press F4.

Figure 4–2 Create Library screen

Create Library (CRTLIB)

Type choices, press Enter.

Library

Library type

Text 'description'

DEVOBJ

*TEST

*BLANK

Name

*PROD, *TEST

F3=Exit

F4=Prompt

F5=Refresh

F10=Additional parameters

F12=Cancel

F13=How to use this display

F24=More keys

Bottom

Field	Explanation
Library	Your development object library name.
Library Type	*PROD or *TEST
Text 'description'	The description of your library

4.5 Creating a Development Source Library

To create the development source library (DEVSRCL), you create a source environment and a source physical file. The source physical file is the Program Source File (JDESRC). All JD Edwards World source members are located in the JDESRC file.

There are two possible methods to create the JDESRC file. You must determine if you have the JD Edwards World Program Generator (CASE) and then choose the appropriate method.

To create a development source library

Type the IBM command Create Library (CRTLIL) and press F4.

Figure 4–3 Create Library screen

Create Library (CRTLIL)

Type choices, press Enter.

Library

Library type

Text 'description'

DEVSRCL

*TEST

*BLANK

Name

*PROD, *TEST

F3=Exit

F4=Prompt

F5=Refresh

F10=Additional parameters

F12=Cancel

F13=How to use this display

F24=More keys

Bottom

Field	Explanation
Library	Your development object library name.

Field	Explanation
Library Type	*PROD or *TEST
Text 'description'	The description of your library

4.5.1 Creating JDESRC for JD Edwards World Program Generator

When an RPGIII or RPGIV program is moved into production at JD Edwards World, the record length is 92 bytes. If you have J.D. Edward's Program Generator product, the program source file format must be 142 bytes to allow for the Program Generator Serial Number and additional required data.

To create JDESRC for JD Edwards World Program Generator

1. To copy an existing file with the correct format (F93002), type the IBM Copy File command (CPYF) and press F4.

Figure 4–4 Copy File screen

```

Copy File (CPYF)
Type choices, press Enter.
From file ..... F93002      Name
Library ..... *LIBL      Name, *LIBL, *CURLIB
To file ..... JDESRC      Name, *PRINT
Library ..... DEVSRC      Name, *LIBL, *CURLIB
From member ..... *FIRST   Name, generic*, *FIRST, *ALL
To member or label ..... *FIRST Name, *FIRST, *FROMMER
Replace or add records ..... *NONE *NONE, *ADD, *REPLACE
Create file ..... *YES      *NO, *YES
Print format ..... *CHAR    *CHAR, *HEX

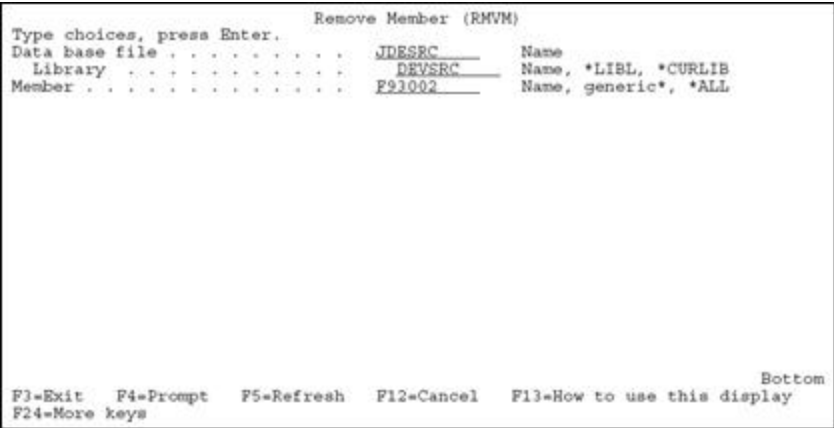
F3=Exit  F4=Prompt  F5=Refresh  F10=Additional parameters  F12=Cancel
F13=How to use this display  F24=More keys
Bottom

```

Field	Explanation
From file	The file and library containing the data to be copied. The file is F93002 and the library can default to *LIBL.
To file	The name of the source file and your development source library. Generally, the file is JDESRC and the library is DEVSRC.
From member	The member name that will be the beginning of the copy process. Generally, this value is *FIRST.
To member or label	The member name that will be the beginning of the receiving process. Generally, this value is *FIRST.
Replace or add records	Specifies whether the records copied should replace or be added to the records in the To file. In this case since the To file does not exist, this value is *NONE.
Create file	Specifies whether the To file does not exist and needs to be created. This value is *YES.
Print format	Specifies whether the characters are printed in character or character and hexadecimal format. This option only applies if the To file is *PRINT.

- 2. To remove the empty member copied from JDESRC, type the IBM Remove Member command (RMVM) and press F4.

Figure 4–5 Remove Member screen



Field	Explanation
Database file	Type the source file and your development source library that contains the record to be removed. Generally, this file is JDESRC and the library is DEVSRCL.
Member	Type the name of the member that is to be removed. This is F93002.

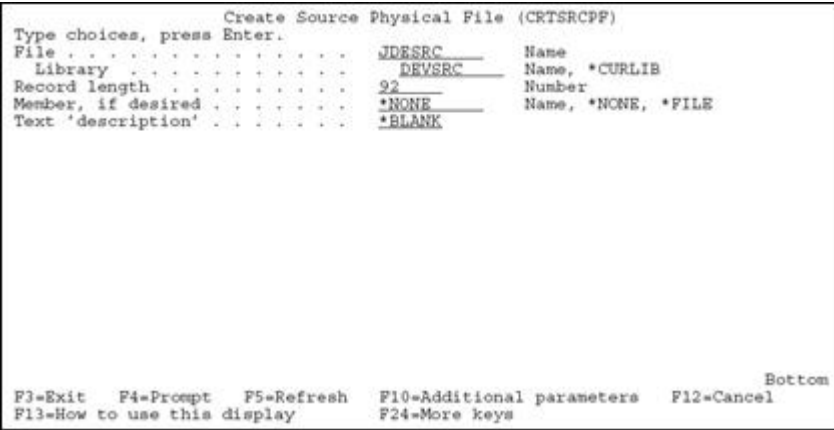
4.5.2 Creating JDESRC Without the Program Generator

If you do not have JD Edwards World World Program Generator product, the program source file format can remain at 92 bytes, as it is when a program is moved into production at JD Edwards World. To create the JDESRC file with a 92 byte record format, you can execute the IBM Create Source Physical File command (CRTSRCPF).

To create JDESRC without the Program Generator

Type the Create Source Physical File command (CRTSRCPF) and press F4.

Figure 4–6 Create Source Physical File screen



Field	Explanation
File	The source file and your development source library that contains the record to be removed. Generally, this file is JDESRC and the library is DEVSRC.
Record Length	The number of bytes in the length of the records to be stored in the source file. This value is 92.
Member, if desired	The member to be added to the source file. Generally, this member is left to *NONE.
Text Description	The description of your source file.

4.6 About User Profiles

You must create profiles that allow users to have access to new environments.

There are two separate methods to define access to an environment. The method you choose depends upon whether the User Profile accesses JD Edwards World software using J98INITA or J98INIT.

4.7 Defining Access for a User Profile using J98INITA

Navigation

From Security Office (G94), choose Library List Control

From Library List Control (G944), choose Library List Revisions

If you are allowing access to your development environment for a user profile that is using J98INITA, you must define a development environment library list name. In addition, the User Signon List must contain the Development Environment Library List name.

To define access for a user profile using J98INITA

1. On Library List Revisions define the libraries that comprise the list.

Figure 4–7 Library List Revisions screen

```

0094                      Library List Revisions
Action Code. . . . . I
Library List Name. . . . . TEST
Description. . . . . Technical Training Example
Menu Program ID. . . . . P00MENU
Library List . . . . . QTEMP DEVORJ CLTORJ JDPORJ DEVDTA DEVCOM DEVSRC CLTSRC
JDESRC_OGPEL

```

F21-Print Library List F9-Library Search

2. To assign the library list to each user, select User Signon List Revisions from the Library List Control menu (G944).

Figure 4–8 User Signon List Revisions screen

0093 User Signon List Revisions			
Action Code. I			
User ID. FPAZZINI			
Seq	Library	Sign-on	
Number	List	Menu	Description
5.00	PRISTINE	A92	MASTER PRISTINE DATA LIBL
10.00	A52DEV	A92	A5.2 Case Cert & G Development
11.00	PGMGEN	A92	Testing A52 Program Generator
20.00	TECPROG	A92	* List Name Not in Master File
30.00	TECPW	A92	Testing A52 Tech Foundations
55.00	KBCASE	A92	* List Name Not in Master File

4.7.1 Defining Access for a User Profile Using J98INIT

If you are allowing access to your development environment for a user profile that is using J98INIT, you must define a new library list.

To define access for a User Profile using J98INIT

Select User Information from the Security Officer menu (G9401).

Figure 4–9 User Information screen

0092 User Information		Action Code. I
User ID. TEACH		
Library List QTEMP DEVOBJ CLTORJ JDFORJ DEVDTA DEVCOM		
DEVSRG CLTSRC JDFSRC SECURITY QGPL		
User Security:		A J K DP F
User Key		
Initial Menu to Execute.		A
Initial Program to Execute		
Menu Level		
User Type.		
User Class/Group		
Batch Job Queue.		QBATCH
Job Scheduling Priority.		5 5
Logging(level/severity/messages)		4 00 *NOLIST
Output Queue		QPRINT
Optional Printer File Library.		
Current Library.		
Employee Address Number (PPAT)		
Set Attention Program.		
F6=Display/Lang Pref		F9=Library Inquiry
F21=Print Lib List		F24=More

Note: Each user profile for the JD Edwards World software must have an IBM profile. To define an IBM profile, use the command, Create User Profile (CRTUSRPRF). When a JD Edwards World user profile is created or changed, the IBM JOBD is created or changed in the library specified in the Processing Option for J00JOBD. The default library is QGPL. If J98INITA is used as the initial program to execute, the JOBD is copied into QTEMP and modified.

4.8 Copy Data to Your Development Environment

You can use several methods to copy data to your development environment. The method you choose should depend upon how much data you need to copy to your development environment. You may copy the following:

- Libraries

- Files
- Records
- JD Edwards World Record Types

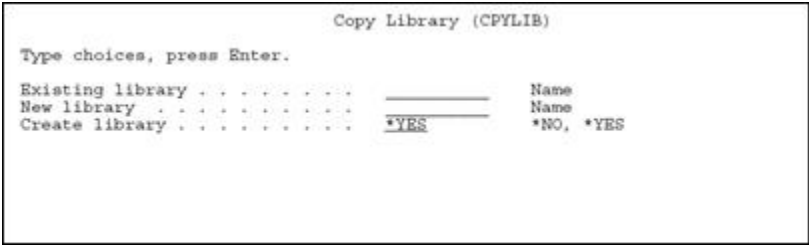
4.8.1 Copying a Library

If you need to duplicate several files into your development environment you can copy one or more libraries.

To copy a library

To display the parameters, type the IBM Copy Library command (CPYLIB) and press F4.

Figure 4–10 Copy Library screen



Caution: If you use CPYLIB, any files that are in use are not copied.

Field	Explanation
Existing Library	The library to be copied in your Production Environment.
New Library	The new library that will be used in your Development Environment
Create Library	Specifies whether the New Library does not exist and needs to be created.

4.8.2 Copying a File

Navigation

From Computer Operations (G96), choose Data Base Management

From Data Base Management (G9645), choose Data Files

If you need to copy specific files from a library in your production environment to a library in your development environment, you use the JD Edwards World copy file utility.

To copy a file

1. On Data File Creation enter the following fields:
 - System Code
 - Create in Library
 - FROM Library

2. Do the following:
 - Enter a 1 next to the files you wish to create from source.
 - Enter a 2 next to the files to be duplicated without data. This is mainly Logical files but could be a Physical file also. Logical files will only be created if the based-on physical file is in the destination library.
 - Enter a 3 next to the files to be duplicated with data. This applies only to Physical files.
3. Each selection will be submitted to batch.

Figure 4-11 Copy Data Files screen

```

98101                                Copy Data Files
Enter System Code. . . 01 Address Book
Library Name: From . . JDEDATA      To . . PROD

Sel File Name  File Type Description
1 F0070        PHYSICAL Country Constants Master File
1 F009101      PHYSICAL Word Search Occurrence Master
1 F0101        PHYSICAL Address Book Master
1 F0101A       PHYSICAL Address Book Master File Audit Log
1 F0101XX      PHYSICAL Address Book Master
1 F0101Z1      PHYSICAL Address Book - Batch File
- F01090       PHYSICAL Supplemental Data Base - CORE
- F01092       PHYSICAL Supplemental Data Base - Code
- F01093       PHYSICAL Supplemental Data Base - Narrative
- F01094       PHYSICAL User Sequence Preference
- F0111        PHYSICAL Address Book - Who's Who
- F0114        PHYSICAL Address Book Memo/Text Information
- F0114W       PHYSICAL WF - Memo Information Work File
- F0116        PHYSICAL Address Book Locations
- F01800       PHYSICAL Address Book Word Search Master

Opt: 1=Copy Data File

```

Note: When using this utility, be sure to copy all related files. All the physical files are listed first, followed by the logical files.

4.8.3 Copying a Record

If you wish to copy a file with only selected records, use the IBM Copy File command (CPYF).

To copy a record

1. Type the Copy File command (CPYF) and press F4.

Figure 4-12 Copy File screen

```

Copy File (CPYF)
Type choices, press Enter.

From file . . . . . F0101      Name
Library . . . . . CLTDTA      Name, *LIBL, *CURLIB
To file . . . . . F0101      Name, *PRINT
Library . . . . . DEVDTA      Name, *LIBL, *CURLIB
From member . . . . . *FIRST   Name, generic*, *FIRST, *ALL
To member or label . . . . . *FROMMBR Name, *FIRST, *FROMMBR
Replace or add records . . . . . *ADD    *NONE, *ADD, *REPLACE
Create file . . . . . *NO        *NO, *YES
Print format . . . . . *CHAR     *CHAR, *HEX

Additional Parameters

Which records to print . . . . . *NONE    *NONE, *EXCLD, *COPIED
Record format of logical file . . . *ONLY   Name, *ONLY, *ALL
Copy from record number . . . . . 365     Number, *START

F3=Exit  F4=Prompt  F5=Refresh  F10=Additional parameters  F12=Cancel
F13=How to use this display  F24=More keys

```

2. Press F10 to display additional parameters.

Field	Explanation
From file	The file and library containing the data to be copied.
To file	The name of the file and your development library the data will be copied to.
From member	The member name that will be the beginning of the copy process.
Replace or add records	Specifies whether the records copied should replace or be added to the records in the To file.
Create file	Specifies whether the To file does not exist and needs to be created.
Print format	Specifies whether the characters are printed in character or character and hexadecimal format. This option only applies if the To file is *PRINT.
Copy from record number	Specifies the record number from which to start the copy.

3. Page down and enter the record number of the record to which you wish to copy.

The Copy to record number is the field in which you specify the record number of the last record to be copied.

Figure 4–13 Copy File screen

```

Copy File (CPYF)

Type choices, press Enter.

Copy to record number . . . . . 365          Number, *END
Copy from record key:
Number of key fields . . . . . *NONE        Number, *NONE, *BLDKEY
Key value . . . . .

+ for more values

More...

F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys

```

Field	Explanation
Copy to Record Number	Specifies the record number of the last record to be copied.
Copy from Record Key	Only applies when copying a file with keyed fields.

4.8.4 Copying JD Edwards World Control Records

You can copy any of the following control records:

- Vocabulary Overrides
- Data Dictionary
- Software Inventory Revisions
- User Defined Code

- DREAM Writer
- Menu
- Generic Rate/Msg

To copy a JD Edwards World record type

Navigation

From Computer Assisted Programming (CAP) (G93), choose Developer's Workbench

From Developer's Workbench(G9362), choose Copy DD,VO,DW,UDC,SVR,Menus

On Copy DD,VO,DW,UDC,SVR,Menus.

Figure 4–14 DD, VO, DW, UDC, SVR, Menus screen

99630 Copy DD, VO, DW, UDC, SVR, Menus

From Library CL7COM To Library DEVCOM

Dictionary Item. . . . ANS Language Appl Ovr. . . .

Vocabulary Overrides Language Scrn/Rpt. . . .

DREAM Writer Form. . . . Language

User Def Codes Sys Language

Type. . . .

Software Versions Rep. . . .

Menu Identification. . . . Language

Generic Rate/Msg Sys

Type

P24=More

Field	Explanation
From Library	The library containing the data to be copied.
To Library	The library in your Development Environment to receive the data.
Dictionary Item	<p>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 file prefix, the RPG data name does not exceed 6 bytes.</p> <p>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). Special characters are not allowed as part of the data item name, with the exception of #, @, \$.</p> <p>You can create protected data names by using \$xxx and @xxx, where you define xxx.</p> <p>Messages can contain up to 10 characters. Types of messages are further defined by glossary group.</p>
Vocabulary Overrides	The name of the screen or report record to be copied. All records for soft coding will be copied.
DREAM Writer Form	The name of the DREAM Writer Form ID to be copied. All versions of the specified form will be copied.

Field	Explanation
User Def Codes Sys	The system code and type of the table to be copied. All values for the specified table will be copied.
Software Versions Rep	The record of the Software Versions Repository member to be copied.
Menu Identification	The menu ID and the display language of the record to be copied.

Note: You can enter and copy only one item at a time. If the item exists in the To Library, it is replaced.

Project Management

This chapter contains these topics:

- [Section 5.1, "Understanding Work Order Processing"](#)
- [Section 5.2, "Creating Work Orders"](#)
- [Section 5.3, "Accessing the Scheduling Workbench"](#)
- [Section 5.4, "Adding Record Types"](#)
- [Section 5.5, "Changing Record Types"](#)

5.1 Understanding Work Order Processing

The Software Action Request System (SAR) is shipped to clients under the name of Work Order Processing.

The Work Order Processing system allows you to:

- Create and classify work orders with simple budgets or estimates
- Schedule and expedite work orders.
- Perform cost accounting by specific work orders or family of work orders.

Unlike jobs that are often preplanned and thoroughly budgeted, software work orders are often completed without the prior knowledge of the accounting department. Work orders are frequently spontaneous and of short duration.

Note: If you purchased system 48 (Work Order Processing), you have all of the programs associated with Work Orders (SARs). If you have not purchased the Work Order Processing system, you have only the programs from the Work Order Processing system that are defined as being part of the General Back Office System (00).

5.2 Creating Work Orders

There are only three required fields when creating a new work order:

- Work Order Number (If you do not provide a work order number, the system assigns one automatically.)
- Description (short)
- Charge to Business Unit

To create work orders

From the Simple Project Management menu (G4812), select Single Task Details.

Figure 5–1 Single Task Details screen

48014 Single Task Details	
Action Code . . . I	Parent W.O. No
Description . . . APCS Class	W.O.Number . . . 282
Status Comment . . Student SAR	Charge to BU . . . 1001
Search X-Ref . . .	Cost Code . . .
Est. Hours . . . 40	Start Date . . . 01/03/94
Est. Amount . . . 1,500	Planned Comp . 12/31/94
Phase . . . 55 Reserved for Clients	Completed . . .
Type . . . 2 Priority . . . H	Status . . . 10
Tax Expl Code . . 1001 Tax Rate/Area . .	Transaction . . 11/12/93
Subledger Inact. . 6001 Active Subledger	Date Assigned .
Customer No. . . Edwards, J.D.	
Manager . . . Allen, Ray	
Description Option	
SAR setup for work to be performed during the Advanced	
Programming Concepts and Skills class	
Engine RB0125-796	
Opt: 1=Insert 9=Del F5=More Desc F9=Cat Codes F21=Print F24=More Keys	

5.2.1 What You Should Know About

Topic	Description
Accessing the W.O. Detail form	To access the W.O. Detail form, choose More Description (F5).
Searching for address numbers	To search for address numbers for the Customer Number and Manager fields, use F1 on the field, or choose More Keys (F24), then Exit to Name Search.

Field	Explanation
Parent W.O. No	<p>This is the parent work order number. You can use this number to:</p> <ol style="list-style-type: none">1. Enter default values for newly added work orders, for example, Type, Priority, Status, or Manager.2. Group work orders for project setup and reporting <p><i>Form-specific information</i></p> <p>For Work Orders</p> <p>When you create a new work order using a parent work order, the system uses information from the parent work order as default values for the new work order. If you leave any of these information fields blank when you create the new work order, the system uses the values from the parent work order. The only information that the system does not use as default values from the parent work order includes:</p> <ul style="list-style-type: none">■ Description■ Extended description■ Tax code■ Tax rate and area■ Date completed

Field	Explanation
Action Code	<p>A code that indicates the activity you want to perform. Valid codes are:</p> <p>A – Add new record</p> <p>C – Change existing record</p> <p>D – Delete existing record</p> <p>I – Inquire on existing record</p> <p>. – End of program or function</p> <p>space – Clear the form</p> <p>If you enter a code that is not active, the system highlights the code and no action occurs.</p> <p>Note: Depending on how your company has set up action code security, you might not be authorized to use all action codes.</p>
W.O. Number	The number that identifies an original document. This can be a voucher, an order number, an invoice, unapplied cash, a journal entry number, and so on.
Description	A brief description of an item, a remark, or an explanation.
Status Comment	A brief description to explain the status of the work order.
Charge to BU	<p>An alphanumeric field that identifies a separate entity within a business for which you want to track costs. For example, a business unit might be a warehouse location, job, project, work center, or branch/plant.</p> <p>You can assign a business unit to a voucher, invoice, fixed asset, and so on, for purposes of responsibility reporting. For example, the system provides reports of open accounts payable and accounts receivable by business units to track equipment by responsible department.</p> <p>Security for this field can prevent you from locating business units for which you have no authority.</p> <p>Note: The system uses this value for Journal Entries if you do not enter a value in the AAI table.</p>
Search X-Ref	An alphanumeric value used as a cross-reference or secondary reference number. Typically, this is the customer number, supplier number, or job number.
Cost Code	A subdivision of an object account. Subsidiary accounts include more detailed records of the accounting activity for an object account.
Est. Hours	The estimated hours that are budgeted for this work order.
Est. Amount	The estimated dollar amount that is budgeted for this work order.
Start Date	<p>This is a start date that you can enter, or an automatic start date which the planning system calculates using a backscheduling routine. The routine starts with the required date and offsets the total leadtime to calculate the appropriate start date.</p> <p>Will default from system date or you can enter a date.</p>
Planned Comp	The date the work order is planned to be completed.

Field	Explanation
Phase	<p>A user defined code (00/W1) that indicates the current stage or phase of development for a work order. You can assign a work order to only one phase code at a time.</p> <p>Note: Certain forms contain a processing option that allows you to enter a default value for this field. If you enter a default value on a form for which you have set this processing option, the system displays the value in the appropriate fields on any work orders that you create. The system also displays the value on the Project Setup form. You can either accept or override the default value.</p>
Completed	The date the work order or engineering change order is completed or canceled.
Type	<p>A user defined code (00/TY) that indicates the type classification of a work order or engineering change order.</p> <p>You can use work order type as a selection criteria for work order approvals.</p>
Priority	<p>A user defined code (system 00, type PR) that indicates the relative priority of a work order or engineering change order in relation to other orders.</p> <p>A processing option for some forms lets you enter a default value for this field. The value then displays automatically in the appropriate fields on any work order you create on those forms and on the Project Setup form. You can either accept or override the default value.</p>
Status	A user defined code (00/SS) that describes the status of a work order or engineering change order. Any status change from 90 thru 99 automatically updates the date completed.
Customer No	A number that identifies an entry in the Address Book system. Use this number to identify employees, applicants, participants, customers, suppliers, tenants, and any other Address Book members.
Manager	<p>The address book number of a manager or planner.</p> <p>Note: A processing option for some forms lets you enter a default value for this field based on values for Category Codes 1 (Phase), 2, and 3. Set up the default values on the Default Managers and Supervisors form. After you set up the default values and the processing option, the information displays automatically on any work orders you create if the category code criterion is met. (You can either accept or override the default value.)</p>
Transaction	The date that an order was entered into the system. This date determines which effective level that the system uses for inventory pricing.
Date Assigned	The date the person responsible for the work order receives the work order.
Tax Expl Code	<p>A user defined code (00/EX) that controls how a tax is assessed and distributed to the general ledger revenue and expense accounts. You assign this code to a customer or supplier to set up a default code for their transactions.</p> <p>Do not confuse this with the taxable, non-taxable code. A single invoice can have both taxable and non-taxable items. The entire invoice, however, must have one tax explanation code.</p>

Field	Explanation
Tax Rate/ Area	<p>A code that identifies a tax or geographic area that has common tax rates and tax distribution. The tax rate/area must be defined to include the tax authorities (for example, state, county, city, rapid transit district, or province), and their rates. To be valid, a code must be set up in the Tax Rate/ Area table (F4008).</p> <p>Typically, U.S. sales and use taxes require multiple tax authorities per tax rate/area, whereas VAT requires only one simple rate.</p> <p>The system uses this code to properly calculate the tax amount.</p>
Subledger Inact	<p>A code that indicates whether a specific subledger is active or inactive. Any value other than blank indicates that a subledger is inactive. Examples are jobs that are closed, employees that have been terminated, or assets that have been disposed. If a subledger becomes active again, set this field back to blank.</p> <p>If you want to use subledger information in the tables for reports but want to prevent transactions from posting to the master record, enter a value other than blank in this field.</p>

5.2.2 Processing Options

Processing options associated with the Single Task Details program allow you to default the value for the Type, Priority, Status, Phase, Category Code 2, Category Code 3, and Manager fields. To see the processing options, type the selection number for Single Task Details and press F18.

5.2.3 Function Keys from Single Task Details

F5 - Detailed Specifications

F5 - Allows you to enter additional detailed information about your work order. Each detail screen is based on Record Type. Record Type A provides room for you to enter more description. You can customize other Record Types to fit your requirements. The steps to add and change Record Types are described later in this chapter.

Figure 5-2 W.O. Detail Entry screen, Full Description of Request

[illegible]

Option	Description
1 - Insert	Insert a blank line for additional text.

Option	Description
9 - Delete	Delete a line of text

F8 - Category Codes

F8 - Allows you to update other work order values.

Figure 5–3 Work Order - Category Codes screen

```

48016                      Work Order - Category Codes
Action Code. . . . . -
W.O. Number. . . . . 282  Tech for Programmers Class
W.O. Flash Message . . . -
Phase. . . . . 55      Reserved for Clients
Category 02. . . . .
Category 03. . . . .
Category 04. . . . .
Category 05. . . . .
Status . . . . .
Service Type . . . . .
Skill Type . . . . .
Experience Level . . . . .
Category 10. . . . .

Originator . . . . .
Supervisor . . . . .
Std. Desc. . . . .
Search X-Ref . . . . .
F2=Standard Desc Text    F24=More Keys

```

Field	Explanation
W.O. Number	The work order identification number. This value defaults from the Single Task Details.
W.O. Flash Message	A highlighted message that will be attached to the work order. <i>Form-specific information</i> The flash message displays as a highlighted message on Backlog Management, replacing the work order description.
Phase	A user defined code describing a stage or category in the development of a project. This value defaults from the Single Task Details.
Category 02	Category Codes that are user defined values associated with the work order.
Originator	The address number of the person who entered the work order. Must be a valid number in the Address Book Master file (F0101).
Supervisor	The address number of the work order supervisor. Must be a valid number in the Address Book Master table (F0101).
Std. Desc	A user defined code describing instructional information. Must be a valid number in the Address Book Master file (F0101). <i>Form-specific information</i> For Equipment/Plant Maintenance users: You can use this code to assign narrative text for a standard procedure. The information displays on the Item PM schedule and the work order routing.

Field	Explanation
Search X-Ref	Any number or characters that will be used to cross-reference work orders. This value will default from the Single Task Defaults screen.

F9 - Name Search

F9 - Allows you to search for a specific address book number.

F15 - Work Order Search Window

F15 - Allows you to search for work order descriptions. It will only return the description.

Figure 5-4 Single Task Details screen

The screenshot displays the 'Single Task Details' screen for task 48014. The main window is divided into two panes. The left pane shows task details: Action Code (I), Description (APCS Class), Status Comment (Student SAR), Search X-Ref (blank), Est. Hours (40), Est. Amount (1,500), Phase (55), Type (2), Tax Expl Code (blank), Subledger Inact. (blank), Customer No. (1001), and Manager (6001). The right pane shows parent W.O. No. (289), Charge to BU (1001), Cost Code (blank), Start Date (01.01.94), Planned Comp. (31.12.94), Completed (blank), and Status (10). Below the task details is a 'Work Order Search' window showing a list of work orders with their Order Numbers and Descriptions. The list includes: 289 WO APCS Class, 400 WO Rework Electrical, 490 WO BACK, DRAWER, 12x30, DESK, 511 WO AS/400 Chassis Frame Supports, 641 WO AS/400 CRT Chassis Frame, 764 WO Electrical, 772 WO Electrical Phase II, 791 WO Electrical Phase III, 799 WO Other Electrical, and 801 WO Electrical. At the bottom of the screen, there are keyboard shortcuts: Opt: 1=Insert, 9=Del, F5=More Desc, F8=Cat Codes, F21=Print, and F24=More Keys.

Order Number	Description
289	WO APCS Class
400	WO Rework Electrical
490	WO BACK, DRAWER, 12x30, DESK
511	WO AS/400 Chassis Frame Supports
641	WO AS/400 CRT Chassis Frame
764	WO Electrical
772	WO Electrical Phase II
791	WO Electrical Phase III
799	WO Other Electrical
801	WO Electrical

F21 - Print Work Order

F21 - Allows you to print the work order, including all of the associated record types.

5.3 Accessing the Scheduling Workbench

The Scheduling Workbench program allows you to review and update work orders. You can retrieve information about work orders in multiple ways. After retrieving the work orders that meet your search criteria, you can update selected fields in those work orders directly from the Scheduling Workbench form.

To access the Scheduling Workbench

From the Simple Project Management menu, select Scheduling Workbench

Figure 5–5 Scheduling Workbench screen

```

48201                      Scheduling Workbench                      Flr Rem Cat T P M
                               _____
Action Code. . . . . I
Job or BU. . . . . 1001 Work Orders in Progress
Originator . . . . .
Customer Number. . . . .
Manager. . . . .
Supervisor . . . . .
Search X-Ref . . . . .
Category Codes . . . . .
                               Parent W.O. No . . . . . Type . . . . . Model. . . . .
                               Cost Code. . . . . Prior. . . . .
                               Phs. . . . . CC2. . . . . CC3. . . . . CC4. . . . . CC5. . . . .
                               Sta. . . . . Srv. . . . . Ski. . . . . Exp. . . . . CC0. . . . .

Q Number Description X-Ref No. St Status Comment T P
- 1347 Subcontractors 10
- 289 APCS Class 10 Student SAR T H

Opt: 1=W.O Entry 4=Return w/# F4=Detail F10=Eq. Workbench F24=More Keys

```

Field	Explanation
Category Codes	Any number or characters that will be used to cross-reference work orders. This value will default from the Single Task Defaults screen.
Job or BU	The business unit that is responsible for charges incurred. Must be a valid business unit setup in the Business Unit Master File (F0006).
Originator	The address number of the person who entered the work order. Must be a valid number in the Address Book Master file (F0101).
Customer	The Address Number of the customer. Must be a valid number in the Address Book Master file (F0101).
Manager	The Address Number of the manager in charge of the work order. Must be a valid number in the Address Book Master File (F0101).
Supervisor	The address number of the work order supervisor. Must be a valid number in the Address Book Master table (F0101).
Parent W.O. No	Through parent work order number, you can group work orders together based on one parent work order, such as the installation of a computer and its associated electrical wiring, which may involve more than one customer or manager. <i>Form-specific information</i> The parent work order number which groups work orders together in a "family".
Model	Determines whether model work orders will be displayed on the screen.
M	Determines whether model work orders will be displayed on the screen.
Search X-Ref	Any number or characters that will be used to cross-reference work orders. This value will default from the Single Task Defaults screen.

Field	Explanation
Cost Code	The subsidiary account responsible for incurred charges.
Number	The work order identification number. This value defaults from the Single Task Details.
Description	Describes the function or option exit. Cannot exceed 40 characters. <i>Form-specific information</i> The name or a brief description of the work order.
X-Ref No	Any number or characters that will be used to cross-reference work orders. This value will default from the Single Task Defaults screen.
Status	A user defined code used to describe the current status of the work order; for example, planned, started, or completed.
Status Comment	This line allows status comments or further description of the work.
Type	User defined code describing the work order type.
Priority P	A user defined code used to assign the priority of the work order; for example, high, medium, or low.

F4 - More Detail

F4 - Displays additional information concerning each work order that is hidden in the Detail Area.

Figure 5–6 Scheduling Workbench screen

```

48201                      Scheduling Workbench                      Pha Cat Cat T P M
Action Code. . . . I
Job or BU. . . . .1001 Work Orders in Progress
Originator . . . .
Customer Number. . . .
Manager. . . .
Supervisor . . . . Parent W.O. No . . .
Status . . . . Thru Search X-Ref . . .
W.O. Date Range. . . Thru.
Compl. Date Range. . . Thru.
Supervisor . . . . Parent W.O. No . . . Type . . Model. .
Search X-Ref . . . Cost Code. . . Prior. .
Category Codes . . Phs. CC2. CC3. CC4. CC5.
Sta. Srv. Ski. Exp. CC0.

Q Number Description X-Ref No. St Status Comment T P
- 1347 Subcontractors 10 Planned Comp
Planned Comp Hours Scheduled. . Est. Hours .
Start Date . 05/26/92 W.O. Flash Message. W.O. Date . 05/26/92
- 289 APCS Class 10 Student SAR 2 H
Planned Comp 12/31/94 Hours Scheduled. . Est. Hours . 40
Start Date . 01/03/94 W.O. Flash Message. W.O. Date . 11/12/92

Opt: 1=W.O Entry 4=Return w/H F4=Detail F10=Eq. Workbench F24=More Keys

```

Field	Explanation
Planned Comp	The date the work is scheduled to be completed.
Hours Scheduled	The hours of work that has been scheduled.
Est. Hours	Total number of hours estimated for the work order.
Start Date Range	The initial date the work is scheduled to begin.
W.O. Flash Message	A highlighted message that will be attached to the work order.

Field	Explanation
W.O. Date	The date the work order was entered.
	Must be a valid number in the Address Book Master File (F0101).

5.3.1 Selection Exits from the Scheduling Workbench

Selection 1 - Work Order Entry

Takes you to the Work Order Entry screen and automatically inquires on the selected work order.

5.3.2 Processing Options

There are processing options associated with the Scheduling Workbench program that allow you to default a Work Order Status Range and a Work Order Type. In addition, you can call either Project Task Details (P48014) or the Equipment Work Orders (P48011) when the W.O. Entry option is selected. Be aware that Equipment Work Orders (P48011) is part of the Work Order Processing system (48). To see the processing options, type the selection number for Scheduling Workbench and press F18.

5.4 Adding Record Types

To add record types

1. From the Misc Additional Features menu (G4841), select Detail Spec. Types.

Figure 5–7 *Detail Spec. Types screen*

[illegible]

- 2.** Add your specified record type and description to the table.

5.5 Changing Record Types

You can change the format of your record type.

To change record types

1. From the Misc Additional Features menu (G4841), select Detail Spec. Over Titles.

Figure 5–8 *Detail Spec. Over Titles screen*

48002		Detail Spec. Over Titles	
Action Code. . . I			
Record Type. . . E			
<u>Sub-Title 1</u>	<u>Sub-Title 2</u>	<u>Sub-Title 3</u>	
<u>Equipment</u>	<u>Production</u>	<u>Production</u>	
<u>Number</u>	<u>Time Out</u>	<u>Time In</u>	
F24=More Keys			

2. Enter the heading text of each column you wish to add to the format of your Record Type.

- Work Order (SAR) file is F4801
- Detail Record Type file is F4802
- Method of tracking programming projects

See Also:

- For more information, consult the *JD Edwards World Work Orders Guide*

Work with Software Action Requests

This chapter contains these topics:

- [Section 6.1, "About SAR System Setup"](#)
- [Section 6.2, "Creating Record Type Codes"](#)
- [Section 6.3, "Defining Record Type Titles"](#)

6.1 About SAR System Setup

To set up a project, you must assign SARs and promotion paths to it. You create the SARs and define promotion paths first because the version control process uses the definitions.

After you set up your SAR system, you can develop the software. The SAR logging program keeps track of your changes as you have specified. While you develop the software, you can also define promotion paths and projects, and attach SARs to projects.

After you finish developing the software, you must update the SARs by using the SAR log before you promote the SAR.

Complete the following tasks:

- [Section 6.2, "Creating Record Type Codes"](#)
- [Section 6.3, "Defining Record Type Titles"](#)

6.1.1 Before You Begin

- The SAR system uses the Work Order files (F4801 and F4802). If your production environment uses these files, and if the F4802 file has different record types than what version control needs, define a separate library that contains these files for version control purposes only.

See Also:

- [Section 10.3, "Defining a Promotion Path"](#)

6.2 Creating Record Type Codes

The Work Order Instructions table (F4802) has an essential role in the version control process. It identifies and captures, for promotion purposes, all the source code members and control table data associated with a SAR. The Version Control system assigns a record type code to each source code member or control table data item,

To create record type codes

- Figure 6–1 User Defined Code Revisions screen**

[illegible]

Character Code	Description
A	Original Request
C	Members Affected
D	Menu Modifications
E	Automatic Accounting Instructions
F	Software Inventory Record Updates
G	Processing Options/DREAM Writer
H	Vocabulary Override Changes
I	Database Changes
J	Constants Data File Changes
K	User Defined Code Changes
M	Connected SAR Numbers
N	Generic Rate/Message Type Changes
O	Connected SAR Numbers
Q	Generic Rate/Message Type Changes
S	Status History
U	Post-Installation Instructions
W	Pre-Compiler Commands
Z	First Included in PTF
3	Next Number Changes

6.3 Defining Record Type Titles

For each record type code you create, you must also define record type titles, which appear as column headings on the W.O. Detail Entry form.

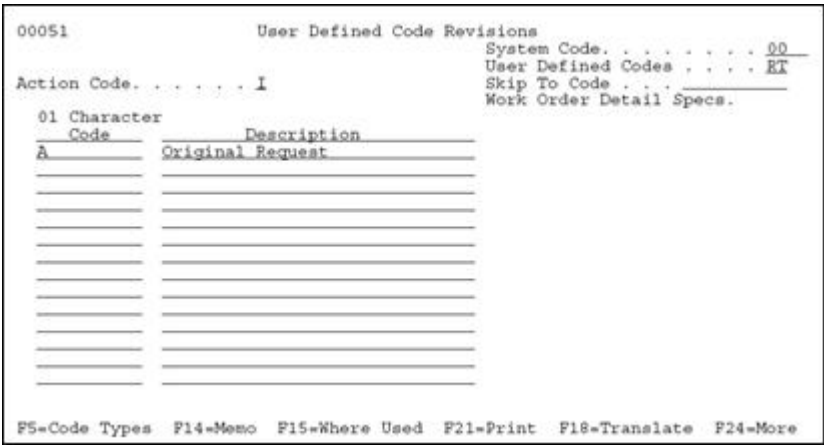
6.3.1 Before You Begin

Create record type codes before you define record type titles. See [Section 6.2, "Creating Record Type Codes"](#).

To define record type titles

- 1. From the Version Control menu (G9261), choose Record Type Titles.
On Record Type Titles

Figure 6–2 User Defined Code Revisions screen



- 2. For each record type you created, complete the following fields with the information in the chart that follows:

Record Type	SUB-TITLE 1	SUB-TITLE 2	SUB-TITLE 3
A	_____	_____	_____
	-	-	-
C	__Member__ Name__	__Source__ Library__	__Object__ Library__
D	__Menu__ Name__	__Option__ Number__	__Job_To__ Execute__
E	_____AAI__	__Company__	__No__
	__	__	-
F	_____CL_ Program	_____ - Program__	_____ - Video/Rpt__
G	__Form__ ID__	__Version__ No__	_____
	__	-	-
H	__Scr/Rpt__ Name__	_____	_____
	__	-	-
I	_____	_____	_____
	-	-	-

Record Type	SUB-TITLE 1	SUB-TITLE 2	SUB-TITLE 3
J	_____	_____	_____
	—	—	—
K	__Help__ __Start__	__Help__ __Stop__	_____
	—	—	—
M	__Sys__ __Code__	__DTAI__ __Name__	_____
	—	—	—
N	__Sys__ __Code__	__Rec__ __Type__	_____
	—	—	—
O	__SAR__ __No__	__SAR__ __No__	__SAR__ __No__
	—	—	—
Q	__Sys__ __Code__	__Rec__ __Type__	_____
	—	—	—
S	_____	_____	_____
	—	—	—
U	Reference_ ID/Code_	Attachment Needed-Y/N	_____
	—	—	—
W	__Program__ Name__	_____	_____
	—	—	—
Z	__Release__ __ID__	__PTF__ Number__	__Date__ Included__
	—	—	—
3	System__ Code__	Line__ Number__	Action__ Code__
	—	—	—

6.3.2 What You Should Know About

Topic	Description
Verifying the record type titles	<p>After you define the record type titles, you can view them to verify their accuracy. On Single Task Details, choose More Description. On W.O. Detail Entry, locate a record type you want to view by using the Record Type field.</p> <p>To access Single Task Details, see Section 5.2, "Creating Work Orders".</p>

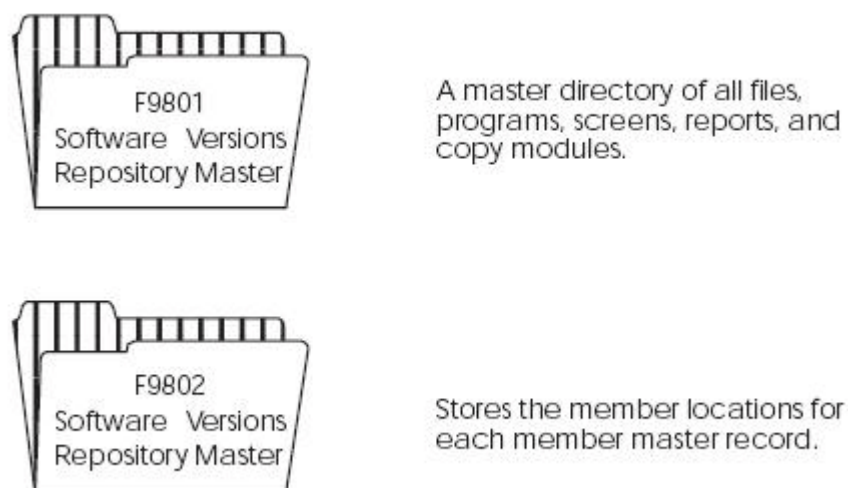
Work with Software Versions Repository

This chapter contains these sections:

- [Section 7.1, "Working with Software Versions Repository \(SVR\)"](#)
- [Section 7.2, "Accessing the Software Versions Repository"](#)
- [Section 7.3, "Member Identifiers"](#)
- [Section 7.4, "Naming Conventions"](#)
- [Section 7.5, "The JD Edwards World System Codes"](#)
- [Section 7.6, "Examples of Program and File Names"](#)
- [Section 7.7, "Optional Files Workbench"](#)
- [Section 7.8, "Navigation Functions"](#)
- [Section 7.9, "Other Function Keys"](#)
- [Section 7.10, "Selection Exits from the Software Versions Repository"](#)

The Software Versions Repository (SVR) consists of the following master directories.

Figure 7-1 Master Directories in the SVR



7.1 Working with Software Versions Repository (SVR)

The Software Versions Repository indicates in what environments a requested member is located and whether the environment is a production or development environment.

The data is used extensively for documentation and plays an important role in JD Edwards World Design and Development tools.

The Software Versions Repository is the natural starting point for all programming and software inquiry functions. It provides exits to the following features:

- Source Entry Utility (SEU)
- SAR Detail Entry
- Screen Design Aid (SDA)
- Report Design Aid (RDA)
- File Design Aid (FDA)
- The Program Generator
- Precompiler Commands
- Repository Services
 - Data Dictionary
 - Menus
 - Vocabulary Overrides
 - Function Key Definitions
 - Processing Options
 - User Defined Codes
 - CASE Profiles
 - SAR Log Inquiry
 - Copy DD,VO,DW,UDC,SVR, Menus
- Optional Files Feature
- Programmer Checklists
- Where Used Facility
- Flowchart Programs/Illustrate File Models
- Source Modifications Editor
- Edit Helps

In addition, it provides access to the following functions:

- Copy Source
- Print Source
- Submit Creation of Object
- Generate Program Source and Help
- Edit Help Instructions
- Delete Source
- Print Help Instructions

7.2 Accessing the Software Versions Repository

The Software Versions Repository serves as the front-end for all JD Edwards World design aids and programming utilities. You can also utilize this form as your own inventory file.

To access the Software Versions Repository

From the Computer Assisted Design menu (G92), choose Software Versions Repository.

Figure 7–2 Software Versions Repository screen

```

9801                               Software Versions Repository

Action Code. . . -
Member ID. . . _____
Description. . . _____
Function Code. . . _____
Function Use. . . _____
System Code. . . _____
Reporting System _____
Base Member Name _____ File Prefix. . . -
Maint/RSTDSP . . . Omit Option. . . - Generation Sev. -
Copy Data (Y/N) . - Optional File. . - Common File. . -


O Source   Object   Source   SAR   Version   S D   User   Date
P Library  Library  File     Number  ID       C P   ID    Modified
_____|_____
_____|_____
_____|_____
_____|_____
_____|_____
_____|_____
_____|_____
_____|_____
_____|_____
_____|_____
Opt: 1=Browse 2=Edit 3=Copy 5=SAR 8=Print 9=Dlt 10=Design 14=Crt F24=More

```

The top portion of the form identifies the member and its attributes. This information is stored in the Software Versions Repository master file (F9801).

7.3 Member Identifiers

The first two fields identify the member.

Field	Explanation
Member ID	<p>The name of the Software Versions Repository member.</p> <p><i>Form-specific information</i></p> <p>The source file contains the source member. In JD Edwards World, three source files reside in the JDFSRC library.</p> <p>They are:</p> <ul style="list-style-type: none"> ■ JDECPY for copy modules ■ JDESRC for RPG, DDS, and CL source code ■ F98CRTCMD for precompiler commands

Field	Explanation
Description	<p>Identifying information of the member, such as Trial Balance by Business Unit. Associated programs, screens, and reports should share the same description.</p> <p>The description associated with each member is used to further identify the purpose of the member.</p> <ul style="list-style-type: none"> Physical files should have a description that explains the purpose of the file. Screens, reports, and CL programs should have the same description as the associated RPG program. Logical files should be designated as follows: LF - fldname, fldname, fldname: where fldname is a key field. Join files should be designated as follows: JF - filename/filename/filename - fldname,fldname,fldname; where the filename is a file over which the join is built and fldname is the key field joining the files. Work files should be designated as follows: WF - filename; where filename is the file that the work file accesses. Copy modules carry their own unique descriptions. File Server programs should be designated as follows: File Server - filename; where filename is the file being served.

7.3.1 Type, Use, and Associated Systems

The following fields identify the associated systems, along with their type and use.

Field	Explanation
Function Code	Designates the object type such as display file, physical and logical files. Use F1 in the field to view the available types. RPG IV programs will use RPGL. RPG IV copy members will use CPYL. UDC 98/F is used to control Member ID and Function Code combinations.
Function Use	Displays how the object is used in the system.
System Code/Product Code	<p>The system code the object is assigned to and delivered under.</p> <p><i>Form-specific information</i></p> <p>Designates the system number associated with the member. The configuration of installation media and the install process itself are driven by this install system code. Use F1 in the field to view valid codes.</p>
Reporting System	Designates the system number for the using system. This may differ from the System/Product code. Exceptions occur for data files used by more than one system.

7.3.2 Member Relationship and Compiling Information

The following fields identify the logical grouping of members and information used in the compile process.

Field	Explanation
Base Member Name	<p>This field allows for the logical grouping of members.</p> <p><i>Form-specific information</i></p> <p>This field simply allows for logical grouping of members.</p> <p>For screens, reports, RPG programs and CL jobs, this name is usually the RPG program name associated with a particular member.</p> <p>For logical files, this name is the physical file upon which it is based and is required.</p>
Omit Option	<p>Designates items in the Software Versions Repository file that would be bypassed for a new release. These codes are as follows:</p> <p>H – Held from all releases</p> <p>X – Omit from all releases</p> <p>S – Omit Source from all releases</p> <p>O – Omit Execution Object from all releases</p>
Generation Sev	<p>Allows the user to designate a severity level when compiling a member.</p> <p>Because some JD Edwards World programs contain messages that appear in the compile listing as a severity level 10 error, it is suggested that you override the IBM default of a severity level 9 to a level 20 for all programs. To do this, enter the following on any command line:</p> <p>CHGCMDDFT CMD(CRTRPGPGM) NEWDFT('GENLVL(20)')</p> <p>RPG IV programs use CRTBNDRPG so the command to change that default is</p> <p>CHGCMDDFT CMD(CRTBNDRPG) NEWDFT('GENLVL(20)')</p> <p>For those specific programs that must override the new default severity level of 20, you can enter the override value in the Generation Severity field.</p>
Maint/RSTDSP	Designates the type of maintenance on a logical file, how a screen will be processed, or if the program contains embedded SQL statements.

7.3.3 Maintenance on a Logical File

Value	Description
0	No maintenance; or the logical is created dynamically.
1	Logical will be immediately updated when physical is updated.
2	Logical update will be delayed until the next time it is opened. - USE WITH CAUTION!

7.3.4 Processing a Screen

Value	Field Values	Description
1	RSTDSP = *NO (Restore Display) DFRWRT = *YES (Defer Write)	Use with OVERLAY. Do not use with PUTOVR/OVRDTA. All writes to the form field or file formats will be collected and written at one time.
A	RSTDSP = *NO DFRWRT = *NO	Overlay Each write statement is written to the screen.
B	RSTDST = *YES DFRWRT = *NO	Use with PUTOVER to clear and write screen at field level.
S		Used when compiling SQL, RPG, RPGL and PL1 programs. For example, if SQL statements exist within an RPG program, the compiler: 1) Executes a create SQL program statement 2) Executes the SQL statements (converts them to calls) 3) Comments them out 4) Executes a CRTSQLRPG program statement and continues as normal

7.3.5 File Information

The following fields identify the file information.

Field	Explanation
File Prefix	This field indicates the prefix associated with a file. Use F1 to display all file prefixes in use. Each physical file should have a unique file prefix.
Copy Data (Y/N)	Used to indicate if a database file must be copied with or without data. The Create User Data Libraries (option 2 from menu G9645) utility accesses this field to determine if the file copied will be copied with data.
Optional File	Indicates the file may be optional in your production environment. F8 provides a list of optional files. <i>Form-specific information</i> Designates if the file may not be needed at a client installation. The explanation of these situations can be found in the Generic Rate/Message information for that file for Generic Rate/Message Type 96/OF (F8 above). All of these files that exist in a specified library can be listed in the Optional File Report on menu G9645.
Common File	Indicates when a file should exist in the common library or user production library. The Create User Data Libraries (option 2 from menu G9645) utility accesses this field to determine if the file should be placed in a common library if specified, or the production library.

7.3.6 Where Are Members Maintained?

The bottom half of the Software Versions Repository form lists the libraries in which the member is maintained. This information is stored in the Software Versions Repository Detail file (F9802).

Figure 7-3 Bottom Half of the Software Versions Repository form

O P	Source Library	Object Library	Source File	SAR Number	Version ID	S D C P	User ID	Date Modified
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—
—	—	—	—	—	—	—	—	—

Opt: 1=Browse 2=Edit 3=Copy 5=SAR 8=Print 9=Dlt 10=Design 14=Crt F24=More

Field	Explanation
Source Library	<p>The library containing the data to be accessed.</p> <p><i>Form-specific information</i></p> <p>The source library where the source file for the object is maintained.</p> <p>This library is usually JDFSRC (for JD Edwards World) or CLTSRC (for the client) for production and DEVSRC for development.</p>
Object Library	<p>The library in your Development Environment to receive the compiled object.</p> <p><i>Form-specific information</i></p> <p>The destination library for the compiled object. This is for compile purposes only and no check is made to ensure that the object is in that library.</p> <p>Leave the object library name blank for copy modules since they are not compiled objects.</p>
Source File	<p>The source file containing the source member.</p> <p><i>Form-specific information</i></p> <p>At JD Edwards World, three source files reside inside of the JDFSRC library.</p> <p>They are</p> <ul style="list-style-type: none"> ■ JDECPY for copy modules, ■ JDESRC for all other source code, and ■ F98CRTCMD for precompiler commands.

Field	Explanation
SAR Number	<p>An abbreviation for software action request (SAR).</p> <ul style="list-style-type: none"> ■ If the CASE profile has *NONE for SAR Number, the SAR number will not be validated in any of the CAD/CAP programs and can be left blank. ■ If a SAR number is entered, it will be validated against the Work Order file, F4801. <p><i>Form-specific information</i></p> <p>The JD Edwards World Development process uses the most recent Software Action Request (SAR)/Work Order number associated with the member. This number must be valid, and if the status of the SAR number is 'complete', you should enter a new SAR to perform additional work on the member. A basic version of the Work Order system is sent to clients who have purchased the Computer Assisted Design (CAD) system and serves as a means for the client to keep track of their projects.</p> <p>If an Employee Address Number is specified on the User Information screen (F0092 file), that number will be used to list SARs currently assigned to that person when F1 is pressed on this field.</p> <p>The edit for this field is controlled by the SAR information entered in CASE Profiles.</p>
Version ID	<p>The software version number to be defaulted in the Software Versions Repository file.</p> <p><i>Form-specific information</i></p> <p>Identifies the JD Edwards World release level of the member in the designated environment.</p> <p>Validated against User Defined Codes 98/RL.</p>
S C (Status Code)	Determines the status of the software in the development process.
Development	<p>Development Progress Code.</p> <p>Indicates the progress of modifications made to the member.</p>
User ID	<p>The IBM-defined user profile.</p> <p><i>Form-specific information</i></p> <p>User ID that last modified the member (automatically updated).</p>
Date Modified	The date the member was last updated (automatically updated).

Note: Each subfile line represents a record in the Software Versions Repository detail file (F9802). The information can be entered manually or through the upgrade process. There is no presence check for the object so if the object was deleted or the information was entered in error, there may be invalid entries.

Typing "D" in the Action Code deletes all the members and control data from the following:

- Software Versions Repository Master file (F9801)
- Software Versions Repository Detail file (F9802)

- Source and Object, if applicable
- Data Dictionary (F9200, F9203, F9816, F98163)
- Vocabulary Overrides (F9220)
- Function Key Definition (F9601, F9611)
- DREAM Writer forms (F98301, F9831, F98311, F98312)
- Cursor Sensitive Helps (F9620, F9621)
- Processing Options (F98302)
- Program Generator, if applicable

7.4 Naming Conventions

The following forms show how the report and CL program share the same description and base member as the program name. The same convention is true for the CL program and the special form.

Figure 7–4 Software Versions Repository screen

```

9801                               Software Versions Repository
Action Code. . . . I
Member ID. . . . P42565
Description. . . . Sales Order Invoices Print
Function Code. . . . RPG   RPG Programs
Function Use . . . . 164   Special Forms
System Code. . . . 42     Sales Order Processing
Reporting System 42     Sales Order Processing
Base Member Name P42565
Maint/RSTDSP . . . . Omit Option. . . . Generation Sev . . . 21
Copy Data (Y/N). N     Optional File. . . N Common File. . . N
                                DREAM Writer Form Exists
O Source   Object   Source   SAR   Version   S D   User   Date
P Library  Library  File     Number  ID       C P   ID    Modified
-- JDFSRC   JDFOBJ   JDESRC   685935 A73     1 -    JDE    11/12/93

```

Figure 7–5 Software Versions Repository screen

```

9801                               Software Versions Repository
Action Code. . . . I
Member ID. . . . R42565
Description. . . . Sales Order Invoices Print
Function Code. . . . PETE   Printer Files
Function Use . . . . 164   Special Forms
System Code. . . . 42     Sales Order Processing
Reporting System 42     Sales Order Processing
Base Member Name P42565
Maint/RSTDSP . . . . Omit Option. . . . Generation Sev . . .
Copy Data (Y/N). N     Optional File. . . N Common File. . . N
                                DREAM Writer Form Exists
O Source   Object   Source   SAR   Version   S D   User   Date
P Library  Library  File     Number  ID       C P   ID    Modified
-- JDFSRC   JDFOBJ   JDESRC   672721 A73     1 -    JDE    11/08/93

```

Figure 7-6 Software Versions Repository screen

```

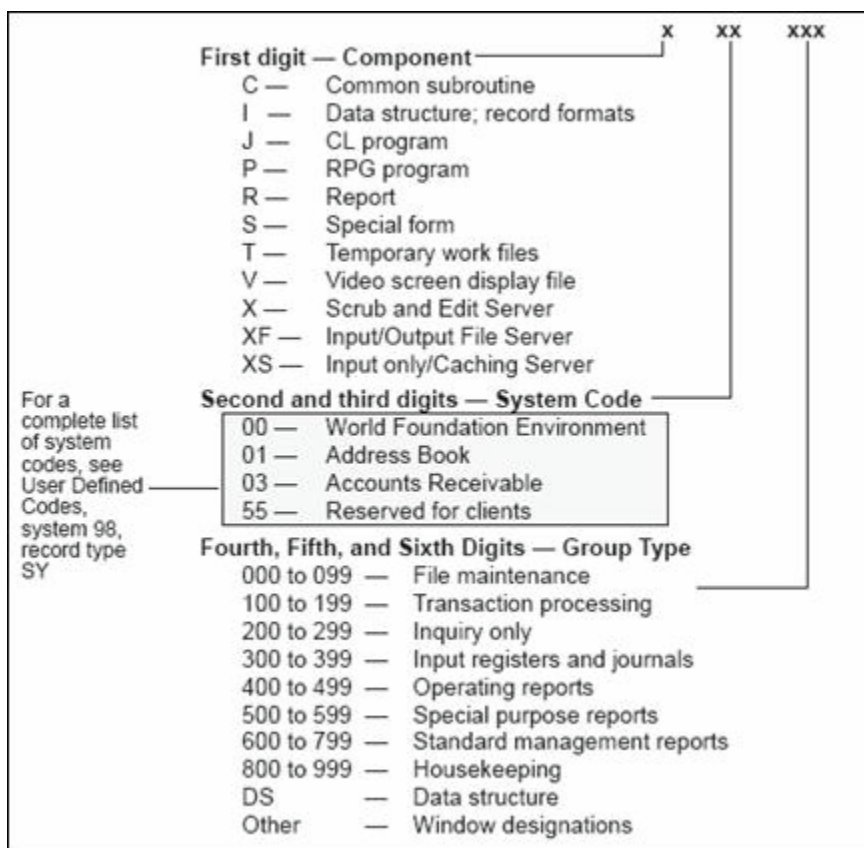
9801                      Software Versions Repository
Action Code. . . I
Member ID. . . J42555
Description. . . Sales Order Invoices Print
Function Code. . CLP CL Programs
Function Use. . . 164 Special Forms
System Code. . . 42 Sales Order Processing
Reporting System 42 Sales Order Processing
Base Member Name P42550 File Prefix. . .
Maint/RSTDSP. . . Omit Option. . . Generation Sev. .
Copy Data (Y/N). N Optional File. . N Common File. . N

O Source Object Source SAR Version S D User Date
P Library Library File Number ID C P ID Modified
_ JDFSRC JDFOBJ JDESRC 644471 A73 1 _ JDE 08/09/93

```

The JD Edwards World naming structure identifies and describes major software components. The first character of the name indicates the type of component, such as program or data file. The second and third characters denote the system and are referred to extensively throughout the software. The fourth, fifth, and sixth characters represent the component group type, such as the function to be performed by the indicated component. The seventh through the tenth characters identify component versions. File names vary from four to eight characters in length, while all other component names are at least six characters long.

Use the following chart as your guide when naming objects.

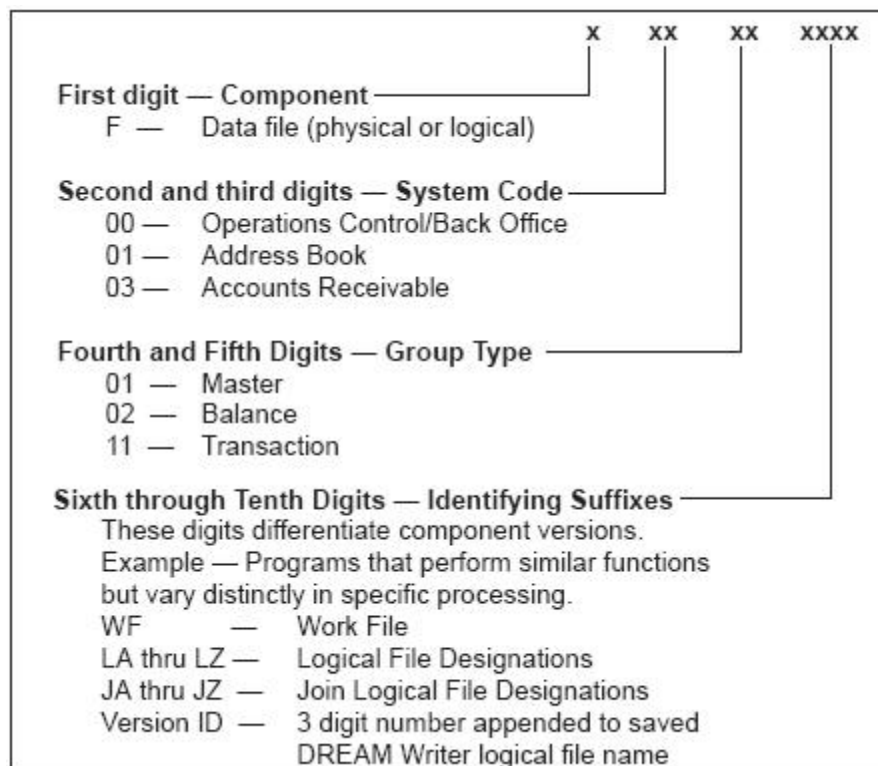
Figure 7-7 Naming Structure Chart

A CL program, RPG program and a Report file may have identical names with different prefixes.

For example: J01051, P01051, R01051 (Address Book Revisions).

Use the following as a guide when naming files.

Figure 7–8 File Naming Guide



The following shows the names for different types of programs and files.

Item	Description
Maintenance program	The maintenance program for a file has the same name with a different prefix. For example, F9220 and P9220 or F9601 and P9601.
Logical files	For logical files over one physical, the logical file has the same name as the physical followed by an L, followed by A thru Z. For example, F0101 has logicals F0101LA, F0101LB, F0101LC, and F0101LD.
Join logical files	Join Logical files have the same name as the principal based-on file, a suffix of J followed by A thru Z. For example, the system names the join of F0006 and F0911 as F0006JA
Temporary files	Batch jobs use T files doing a CRTDUPOBJ. The job then removes the object after completion. <ul style="list-style-type: none"> Usually Physical Files Begin with T Found in JDFOBJ

Item	Description
Dynamic work files	Dynamic work files are usually FASTR processing requirements. Dynamic work files create and delete after the job is complete. <ul style="list-style-type: none">■ Usually logical files■ Have same name as program

7.5 The JD Edwards World System Codes

When used in menus, the system code follows the letter in the menu name. Shown below are the system codes for the standard AS/400 systems:

General System Codes

System Number	System
00	General Back Office
01	Address Book
01P	Purchase Cards/Expense Reporting
02	Electronic Mail
03	Accounts Receivable
03B	Enhanced Accounts Receivable
03C	Customer Issue Tracking
04	Accounts Payable
05	Standalone Time Accounting
06	Old Payroll
07	New Payroll
08	Human Resources
08A	Application Tracking
08B	Benefits Administration
08C	Canadian Specific HR Functions
08H	Health and Safety
08P	Position Control
08R	Requisitions
08U	US Specific HR Functions
08W	Wage and Salary
09	General Accounting
09E	Expense Reimbursement Reporting System Only
10	Financial Reporting
10C	Multi-Site Consolidations
11	Foreign Currency/Cash Basis
11C	Cash Basis Accounting
12	Fixed Assets

System Number	System
13	Equipment/Plant Management
14	Modeling, Planning, and Budgeting
15	Commercial Property Management
16	Residential Property Management
17	Customer Service Management
17A	Ariba Integration Reporting Purposes Only
17C	Call Management Reporting Purposes Only
18	Resource Scheduling Reporting Purposes Only
19	Utility CIS
20	Energy Data Base
21	Lease Management
22	Production System
23	Revenue Distribution
24	Contracts
25	Joint Interest Billing
26	Gas Balancing
27	Investor Services
28	Projects on Hold - Energy
29	AFE Accounting
30	Product Data Management
30A	Product Costing Reporting Only
31	Shop Floor Control
31A	Manufacturing Accounting
3110	Process Control
32	Configuration Processing
32C	Custom Works
33	Capacity Requirements Planning
34	DRP/MPS/MRP
34A	Advanced Planning & Scheduling
35	Enterprise Facility Planning
36	Forecasting
37	Quality Management
38	Distribution Contracts
39	Bulk Stock Control
40	Inventory/OP Base
4010	Advanced Price Adjustments
41	Inventory Management
41B	Bulk Stock Control

System Number	System
42	Sales Order Processing
42A	Sales Force Automation Reporting Purposes Only
42B	Enterprise One Sales Order Entry
42E	ECS Sales Order Processing
43	Purchase Order Processing
44	Contract Administration
44H	Homebuilder Management
4401	Homebuilder Management
45	Advanced Price Analysis
46	Warehouse Management
47	Electronic Data Interchange
48	Work Order Processing
48S	Service Billing
49	Transportation
50	Job Cost Accounting
51	Job Cost Accounting
52	Job Cost Billing
53	Change Management
55-59	Reserved for Clients
60-69	Reserved for JD Edwards World Custom
70	Multi-National Products
71	Client Server Applications
73	M&D Complimentary Products
74	EMEA Localizations
74G	Greece
74H	Hungary
74I	Ireland
74L	Portugal
74N	Nordics
74P	Poland
74R	CIBS
74S	Spain
74T	Turkey
74Z	Czech Republic
75	Asia Pacific Localizations
75H	Thailand
75I	India
75K	South Korea

System Number	System
7T	Taiwan
76	Latin American Localization
76A	Argentinean Localization
76C	Columbia
76H	Chile
77	Canadian Payroll
77Y	Canadian Payroll Year End Programs Reporting System Only
78	OBSOLETE CS Travel Expense Management
79	OBSOLETE Foreign Translation

Technical Foundation Systems

System Number	System
00	General Back Office
80	Business Intelligence
81	DREAM Writer
82	World Writer
83	Finance Report Writer-FASTR
84	Distributed Data Processing
85	Custom Programming
86	Foreign Language Translation
87	JD Edwards World Internal
88	Cautious Purge System
89	Conversion Programs
91	Documentation
92	Computer Assisted Design
93	Computer Assisted Programming
94	Security Officer
95	Unattended Night Operations
96	Computer Operations
97	Software Load & Install
98	Technical Aids
98e	Electronic Burst & Bind
98FT	Form Type
98SA	Sample Application
99	Technical Aids - Internal
99D	Technical Tools - DASD Sizer Reporting Purposes Only
99M	Technical Tools - Masters/Update Reporting Purposes Only

7.6 Examples of Program and File Names

The following is a detailed breakdown of program and file names. All of the file types have the same system code and component group.

Figure 7–9 File Name Breakdown

Data Files

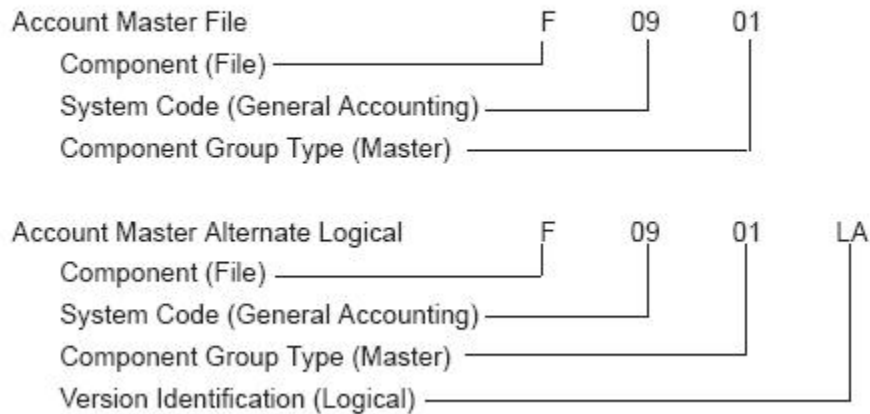


Figure 7–10 Video Screen Name Breakdown

Videos (Screens)

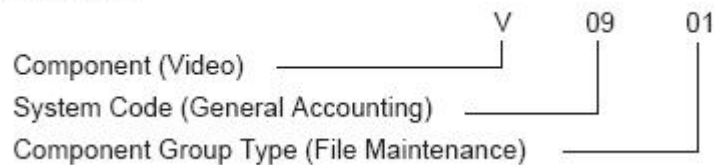


Figure 7–11 RPG Program Name Breakdown

RPG Programs

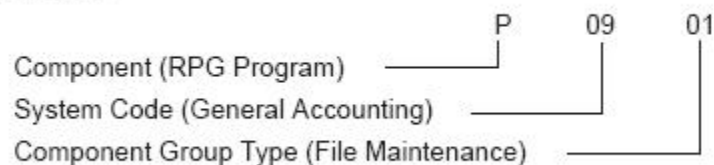
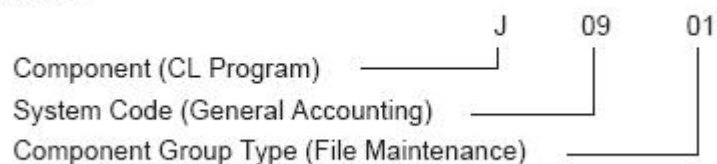


Figure 7–12 CL Program Name Breakdown

CL Programs



7.7 Optional Files Workbench

The Optional Files Workbench provides better access to optional files. When you delete optional files, they are logged. If you reinstall, those files are not put back into the system. Each file has an explanation about the circumstances that makes it optional. The Option Files Workbench is accessed via option 18 from menu G9645.

Note: If you need the deleted files, you can remove them from the logged optional files and copy them from JDFDATA.

Figure 7-13 *Optional Files Workbench screen*

98290	Optional Files Workbench	System Code.
Library.	JDFDATA73	Reporting Sys.
Skip To File		
O	File ID	Description
-	F00021	Next Numbers by Company/FY - Automatic
-	F00021LA	Next Numbers by Company/FY - Automatic - Logical Key Co,Seq
-	F0006JA	JF - BILLING ONLY - F0006/F0911 - Cost Center
-	F0006JE	JF - Profit Recognition F0006/F5144 (Cost Center)
-	F0006LC	LF - JOB COST ONLY - Level of Detail, Cost Center
-	F0006LG	Business Unit Master
-	F0006LH	LF - JOB COST ONLY - Company, Desc Compressed, Cost Center
-	F0013	Currency Codes
-	F0018LD	LF - OneWorld - Document Typ, Document No, Key Co,
-	F0030LF	LF - OneWorld - Decending Unique ID
-	F0030LG	LF - OneWorld - Type, Account ID, Cost Center
-	F0031	Cross Over Rules
-	F0031LA	LF - domestic file, foreign file, foreign field
-	F0031LB	LF - domestic file, foreign file, dom reference field
-	F0040	PC Batch Entry - Error File

Opt: 1-Explanation 2-SVR 4-Delete F2-Cmd Entry F5-View Log F24-More

7.7.1 Logical Files

- The Member ID for logical files ends with Lx, where x is the next available letter in alpha sequence.
- The Object Library is usually JDFDATA.
- The Description should list the key fields for the view.
- The Maint/RSTDSP is 1 for permanent system logicals.
- The Base Member Name is the physical file the logical view is over.
- If you are adding a custom logical, start at the bottom of the sequence for example L99. If JD Edwards World add a logical, it will be sequenced after the previous one they created.

Figure 7–14 Software Versions Repository screen

```

9801                      Software Versions Repository
Action Code. . . . I
Member ID. . . . F0911LA
Description. . . . LF - Doc Type, Doc, Key Co, G/L Date(##YYMMDD), Line #, Ext
Function Code. . . LF Logical Files
Function Use. . . . 230 Transaction Files
System Code. . . . 00 Technical Foundation
Reporting System 02 General Accounting
Base Member Name F0911 File Prefix. . . GL
Maint/RSTDSP. . . 1 Omit Option. . . Generation Sev .
Copy Data (Y/N). N Optional File. . N Common File. . N

O Source Object Source SAR Version S D User Date
P Library Library File Number ID C P ID Modified
-- JDESRC JDEDTA JDESRC 591710 A61 1 - JDE 03/22/93

```

7.7.2 Join Logical Files

- The Description lists the files over which the join is built.
- The Base Member Name is the primary file in the join.
- If the Physical files exist in separate libraries, the CRTLF command must be used since the SVR process can only create a logical if the joined files are in the same library.

Figure 7–15 Software Versions Repository screen

```

9801                      Software Versions Repository
Action Code. . . . I
Member ID. . . . F0006JA
Description. . . . JF - BILLING ONLY - F0006/F0911 - Business Unit
Function Code. . . LF Logical Files
Function Use. . . . 210 Master Files
System Code. . . . 00 Technical Foundation
Reporting System 00 Technical Foundation
Base Member Name F0006 File Prefix. . . MC
Maint/RSTDSP. . . 2 Omit Option. . . Generation Sev .
Copy Data (Y/N). N Optional File. . N Common File. . N

O Source Object Source SAR Version S D User Date
P Library Library File Number ID C P ID Modified
-- JDESRC JDEDTA JDESRC 493167 A61 1 - JDE 03/05/93

```

7.7.3 Copy Modules

- The Member ID begins with C, D, E, or I.
- The Source File is JDECPY.
- The Description describes the function of the module.
- The Function Code is COPY or CPYL (RPG IV code).

Figure 7–16 Software Versions Repository screen

9801Software Versions RepositoryRelease. . A61

Action Code. . . I

Member ID. . . C00SC

Description. . . Copy Module - Retrieve Soft Coding

Function Code. . . COPY RPG Copy Module

Function Use. . . 124 Common Subroutine

System Code. . . 92 Technical Tools

Reporting System 92 Technical Tools

Base Member Name C00SC

Maint/RSTDSP . . . Omit Option. . . File Prefix. . .

Copy Data (Y/N). N Optional File. . N Generation Sev . .

Common File. . . N

O	Source	Object	Source	SAR	Version	S	D	User	Date
P	Library	Library	File	Number	ID	C	P	ID	Modified
—	JDFERC	JDFORJ	JDFCPY	603784	A61	1	—	JDE	06/10/93

7.7.4 Windows

- The Member ID begins with V, the system number, then an alphabetic identifier as shown in the example below.
- The Description describes the function of the form.
- Maint/RSTDSP is left blank to allow the form to appear in front of text from the calling form.

Figure 7–17 Software Versions Repository screen

9801Software Versions Repository

Action Code. . . I

Member ID. . . V09ACCT

Description. . . Account Master Additions Window

Function Code. . . DSRF Video Display Files

Function Use. . . 111 File Maintenance

System Code. . . 92 General Accounting

Reporting System 92 General Accounting

Base Member Name P09ACCT

Maint/RSTDSP . . . Omit Option. . . File Prefix. . .

Copy Data (Y/N). N Optional File. . N Generation Sev . .

Common File. . . N

O	Source	Object	Source	SAR	Version	S	D	User	Date
P	Library	Library	File	Number	ID	C	P	ID	Modified
—	JDFERC	JDFORJ	JDESRC	552868	A61	1	—	JDE	12/08/92

7.8 Navigation Functions

The following Function keys facilitate navigation within the Software Versions Repository.

Function	Description
F6	Access Repository Services
	You can access the Repository Services form using F6. This form provides access to the other repository services within JD Edwards World.

Sample F6 - Repository Services

Figure 7-18 *Software Versions Repository screen*

```

9801                               Software Versions Repository

Action Code . . . I
Member ID . . . P01051
Description . . . Address Book Information
Function Code . . RRG   RPG Programs
Function Use . . . 111   File Maintenance
System Code . . . Q1    Address
Reporting System  Q1     Address
Base Member Name P01051
Maint/RSTDSP . . -      Omit Opt
Copy Data (Y/N) N       Optional
                        DREAM Writ

O Source   Object   Sourc
P Library  Library  File
-- JDXSRC61 JDPCB761 JDESR
-- JDXSRC61 JDXCB761 JDESE
-- PGXSRC61 PGXCB761 JDESR

                                Available Services
                                -- Menu
                                -- Vocabulary Overrides
                                -- Function Key Definitions
                                -- Processing Options
                                -- User Defined Codes
                                -- Edit System Helps
                                -- CASE Profiles
                                -- SAR Log Inquiry
                                -- Copy DD,V0,DW,UDC,SVR,Menus

Opt:  1=Select      F12=Previous

Opt:  1=Browse 2=Edit 3=Copy 5=SAR 8=Print 9=Dlt 10=Design 14=Crt  F24=More
```

Use selection 1 to select the available services.

Function	Description
F9	Automatic Reinquiry Once the system has accepted the changes you made to a member and cleared the screen, you can automatically inquire on that member by pressing F9.
F17	Position Cursor to Action Code When you inquire on a member, the system positions the cursor in the subfile for the screen. To reposition your cursor in the Action Code field, press F17.
F19	Previous Member When you inquire on a member, the system positions the cursor in the subfile for the screen. To reposition your cursor in the Action Code field, press F17.
F20	Next Member To access the member stored after the currently displayed member, press F20.

7.9 Other Function Keys

Function	Description
F2	<p>Automatic Reinquiry</p> <ul style="list-style-type: none"> ■ To access a command line to enter a JD Edwards World or IBM command without having to exit to Command Entry or a menu. ■ Calls a JD Edwards World program and not the IBM Command Entry. <p>If you are secured out of Command Entry or Menu Traveling, you still receive this command line but you cannot execute commands or menu travel.</p>
F8	<p>Optional Files</p> <p>The system displays the optional files.</p>

Function	Description
F10	Checklists Displays a user defined checklist. Opt 1 displays additional job information.
F13	Displays additional category code information for each member. You can cross-reference category code values to the Software Versions Search program (23/G91).
F14	Member Parameter/Key List Identifies the access path for keyed files.
F15	You can access the Where Used facility using Function key 15 on Software Versions Repository. Use this facility to determine every location that a particular member is used.

Below is an example form displaying every program that uses the Business Unit Master screen:

Use an * in Type on the Cross Reference screen to see the possible combinations.

Figure 7–19 Cross Reference screen

```

980014                                Cross Reference
Object: Name . . . V0006              Business Unit Master Revisions - Single
Type . . . E                          All programs using file
To Display E
Funct Cd . . .

O  Name          Description          Field Attr T Start Upd
P  P0006         Business Unit Master Revisions - Single  Len  Rec  Y  Loc  Y/N
-                                     Y

Opt: 1=SVR  2=Create Object  3=Field Explanation  F21=Print  F16=Regenerate

```

Note: To use this facility, you must run the Cross Reference Rebuild.
(6/G9642)

F23 - Flow Programs / Illustrate File Models

F23 - To display a flowchart if the member is a program or a Data Model if the member is a file.

This is only functional for programs and files.

7.10 Selection Exits from the Software Versions Repository

The following is a list of the options available from the Software Versions Repository. By referring to the form pictured in the beginning of the chapter, you can see that there are more options than can be displayed on the form.

Option	Description
1	Browse Displays the source member in SEU browse mode.
2	Edit Displays the source member in SEU update mode.
3	Copy the source member Copies the source member to another source file member or copies the member to a new member name in the same file. Adds SVR master and detail records if needed. Copies pre-compiler commands and Vocabulary Overrides. Copies program generator specifications if requested.
5	Work with SAR detail Displays the SAR/Work Order Detail Entry screen, defaulting to the members affected portion of the SAR/Work Order.
8	Print source Prints the member.
9	Delete/ remove source Deletes the detail record and removes the source member from the source file. The same IBM authority that applies to the command RMVM applies to this function. Will delete the object if requested by the user. If you do not remove the source member, you will not be allowed to delete the object.
10	Exit to design aid Determines what type of member you are accessing and then exits to the correct JD Edwards World design tool; that is, SDA/RDA/FDA/Program Generator.
11	Precompiler commands for JD Edwards World compiler. Accesses the source code for the precompiler commands associated with a program. A highlighted message, Precompiler Commands Exist, indicates there is a member with the same name in the F98CRTCMD file. Contains information the compiler will use when compiling the program. Note: Only one person can view the same pre-compiler commands.
14	Submit object creation Compiles the member and generates an object. The type of object determines what library the compiled object will be placed into.
15	Generate program source and help Submits the member to the program generator in order to generate source and related helps. Only applicable to CASE users.

Option	Description
17	Edit help instructions Accesses the help instructions for a particular program in update mode utilizing SEU.
18	Generate & rebuild help instructions Submits the helps for generation and rebuilds them into their final form once they have been entered.
20	Browse SDA/RDA Accesses SDA or RDA in browse mode with Vocabulary Overrides.
21	Print help Prints the help instructions for the member.
25	Print illustration Prints an illustration of printer files, display files, or data base files.
30	Source modifications editor Allows you to view the source modifications made to the member through SEU after source was generated. Stored in the F93002 file. Only applicable to CASE users.

CASE Profiles

This chapter contains these topics:

- [Section 8.1, "About CASE Profiles"](#)
- [Section 8.2, "Accessing CASE Profiles"](#)
- [Section 8.3, "Function Key Exits from the CASE Profiles Program"](#)
- [Section 8.4, "Summary of CASE Profiles"](#)

8.1 About CASE Profiles

CASE profiles are user defined values that can pertain to individual users or to one *PUBLIC user profile. The profiles are stored in F98009. Parameters in these profiles are used when copying source members or when designing or compiling programs and files.

The following processing control parameters are defined by the user:

- Default development libraries
- Compile job queue
- Program Generator source generation job queue
- Compile print options
- SAR logging options

Note: You should immediately update the record for User ID *PUBLIC to reflect JOBQs, OUTQa and Libraries on your machine.

When entering information for *PUBLIC, all fields are required.

Default CASE Profile values are maintained in a record with the User ID *PUBLIC. You should enter CASE Profile values for individual users only if you need overrides to the *PUBLIC values.

When entering values for individual users, you can leave all fields blank except for the specific values being overridden.

8.2 Accessing CASE Profiles

To access CASE Profiles

To access CASE Profiles, choose one of the following methods:

1. From Computer Assisted Design (CAD) (G92), choose CASE Profiles.

Figure 8–1 Computer Assisted Design (CAD) screen

```
G92                                J.D. Edwards & Company                                JDED
Programmers                        Computer Assisted Design (CAD)

... SYSTEM DESIGN AIDS                ... PROGRAM DESIGN AIDS
2. Software Versions Repository        14. Processing Options
3. Menus                             15. Help Instructions
4. Data Dictionary                    16. Universal File Convertor
5. Model Relations
6. CASE Profiles
7. Functions Key Definitions
8. Vocabulary Overrides

Selection or command
====>

```

2. From Run Time Setup (G90), choose Software Version Repository, press F6 to open up the Repository Services form, select CASE Profiles.

Figure 8–2 Software Versions Repository screen

```
9801                                Software Versions Repository

Action Code. . . -
Member ID. . . -
Description. . . -
Function Code. . -
Function Use. . . -
System Code. . . -
Reporting System -
Base Member Name -
Maint/RSTDSP . . - Omit Opt
Copy Data (Y/N). - Optional

O Source  Object  Source
P Library Library  File

985001-----Repository Services-----
*1 Available Services
- Data Dictionary
- Menus
- Vocabulary Overrides
- Function Key Definitions
- Processing Options
- User Defined Codes
- Edit System Helps
- CASE Profiles
- SAR Log Inquiry
- Copy DD, VO, DW, UDC, SVR, Menus
-Sel:---1=Select-----F12=Previous-----

Opt: 1=Browse 2=Edit 3=Copy 5=SAR 8=Print 9=Dlt 10=Design 14=Crt F24=More

```

The CASE Profile form displays. The program attempts to automatically inquire on your User ID. If your ID is not set up, an error occurs. You can inquire on *PUBLIC.

Figure 8-3 CASE Profiles screen

```

98009                      CASE Profiles
Action Code. . . . . 1
User ID. . . . . *PUBLIC

Default Development Environment      Program Creation Options
Source File. . . . . JDESEC          Compile Job Queue. . . . . COMPILE
Source Library. . . . . EGSEC        Prog Gen Job Queue. . . . . CLONE
Object Library. . . . . EGFCBJ       Compile Target Release. *CURRENT
CL Source File. . . . . JDESEC       Print Option. . . . . 1
Data File Library. . . . . TEST      Cross-Reference Listing N
SAR Number. . . . .
Version ID. . . . . A7.3
Status Code. . . . . 1              Custom

SAR Options
SAR File Library. . . . . TEST
SAR Delivery Type. . . . . *LOG      Log to SAR# 00000000

Miscellaneous
Source Gen Opt (Future) -
Helps Maint Opt (Future) -          SEU

F24 = More Keys

```

Default Development Environment

Field	Explanation
Source File Name	The default source file name where source is to be stored within the source library. Must reside within the source library specified.
Source Library	The default library where source will be stored. The source file specified must reside within this library.
Object Library	The default library where compiled objects will be stored.
CL Source File	The default library where source for CL programs will be stored. The value specified must reside within the source library specified.
Data File Library	Used to specify the test (or development) library for physical and logical files. Used as the default object library for the Software Versions Repository when copying source code for physical or logical files.
SAR Number	An abbreviation for software action request (SAR). <ul style="list-style-type: none"> *NONE = the SAR number will not be validated in any of the CAD/CAP programs and can be left blank. If a SAR number is entered, it is used in conjunction with the SAR Delivery Type of *DFT (default).
Version ID	The software version number to be defaulted in the Software Versions Repository file.
Status Code	Determines the status of the software as well as where it resides in production. It will specify that the software is in production, in development, or in release.

Caution: If you create a custom environment, put 2, 3, or 4 in user defined codes. If you have a '1' (production), the system will think it is a JD Edwards World file and write over it during the Software Version Repository Merge in an upgrade.

Program Creation Options

You have the following options when you create a program.

Field	Explanation
Compile Job Queue	<p>Specifies which job queue will be used when submitting programs to compile.</p> <p>This job queue is used for programs with function code of RPG, RPGL, CBL, PLI, C and SYSC.</p>
Prog Gen Job Queue	<p>Specifies which job queue will be used when submitting jobs from the Program Generator.</p> <p>These jobs include the source code generation and the source code monitor from SEU.</p>
Compile Target Release	<p>Used by various AS/400 compilers (RPG, RPGL, CLP, COBOL, C) to compile an object compatible with a specified target release.</p> <ul style="list-style-type: none">■ A value of *CURRENT compiles an object compatible to the release of the machine at compile time.■ A value of *PRV compiles an object compatible with both one release back and the current release.
Print Option	<p>Used to designate whether or not a report will be generated when an object is compiled.</p> <p>0 – no print</p> <p>1 – print</p> <p>2 – print and hold spool file</p> <p>3 – print only, does not generate execution object (applies to COBOL and RPG only)</p> <p>4 – print when compile or creation fails</p>
Cross-Reference Listing	<p>Specifies whether a cross-reference listing will be generated for variables and fields in a program's compile listing.</p>

Note: The default job queue for compiles is called COMPILE. If you do not have a COMPILE JOBQ, enter the JOBQ name for compiles on the *PUBLIC CASE profile.

SAR Options

The following fields provide you with options for the location of your SAR file and SAR logging.

Field	Explanation
SAR File Library	<p>Specifies the library where the Software Action Request (SAR) file for software development exists.</p> <ul style="list-style-type: none"> ■ If left blank, the user's library list will be used. ■ You can specify *NONE in the SAR number field if you do not want any SAR number editing.
SAR Delivery Type	<p>Associated with SAR logging. SAR logging is a feature which tracks all activities related to modifying JD Edwards World' software.</p> <ul style="list-style-type: none"> ■ *NONE = no logging. ■ *LOG = log to SAR number 00000000 (no SAR number is used for logging). ■ *DFT = log to a default SAR number (specified in the SAR Number field). ■ *PROMPT = log and prompt the user for the SAR number to be used and allow the user to enter the revision notes.

Miscellaneous

The following fields are reserved for future use.

Field	Explanation
Source Gen Opt (Future)	For future use.
Helps Maint Opt(Future)	For future use.

8.3 Function Key Exits from the CASE Profiles Program

Function Key	Description
F6	<p>Access Repository Services</p> <p>This key will display a form that provides access to the other repository services including CASE profiles.</p>
F9	<p>Previous Member</p> <p>Allows you to re-inquire on the last record viewed.</p>

8.4 Summary of CASE Profiles

- The CASE Profiles file is F98009.
- You need to update the *PUBLIC record as well as add any additional individual records desired.
- You cannot delete the *PUBLIC record.
- When entering information for the *PUBLIC record, all fields are required.
- The record for User ID *PUBLIC contains the values that are used as the defaults for all users unless individual user profiles have been set up.
- When entering values for individual profiles, all fields are left blank EXCEPT for the specific values being overridden on the *PUBLIC profile.
- SAR Number and SAR Delivery type work together to determine what type of SAR logging should occur.

- *NONE = no SAR logging at all.
- *LOG = no SAR number is included as part of the SAR logging.
- *DFT = the SAR number specified is used for the SAR logging.
- *PROMPT = you are prompted for a SAR number and revision notes when an entry is about to be made to the SAR log.

Working with SAR Log

This chapter contains these topics:

- [Section 9.1, "About SAR Log"](#)
- [Section 9.2, "Setting Up User Input Options for SAR Logging"](#)
- [Section 9.3, "Selecting Types of SAR Information to Log"](#)
- [Section 9.4, "Accessing SAR Log Inquiry"](#)
- [Section 9.5, "Summary of the SAR Log Inquiry"](#)

9.1 About SAR Log

After you create the SARs, you must activate SAR logging, which automatically tracks the SARs as you develop the software.

The SAR Log Inquiry program allows you to review information in the SAR Log file (F9810).

You can also change the SAR Number and Revision Notes for individual log records.

9.1.1 Before You Begin

- Create SARs before you activate SAR logging.

From the Version Control menu (G9261), choose CASE Profiles.

9.2 Setting Up User Input Options for SAR Logging

To set up user input options for SAR logging

On CASE Profiles

Figure 9–1 CASE Profiles screen

```

98009                      CASE Profiles
Action Code. . . . . 1
User ID. . . . . MORRIS

Default Development Environment      Program Creation Options
Source File . . . . . JDESRC         Compile Job Queue . . . . . COMPIL
Source Library. . . . . PGPSSRC61    Prog Gen Job Queue. . . . . CLONE
Object Library. . . . . PGPJOB61     Compile Target Release. . . . . *CURRENT
CL Source File. . . . . JDECLSRC      Print Option . . . . . 1
Data File Library . . . . . PGPDTA61  Cross-Reference Listing N
SAR Number. . . . . 774487
Version ID. . . . . A61              A6.1 Base
Status Code . . . . . 2              Development

SAR Options
SAR File Library. . . . . DDPEDATA
SAR Delivery Type . . . . . *DFT      Default SAR Number

Miscellaneous
Source Gen Opt (Future) -
Helps Maint Opt (Future) -          SEU

F24=More Keys

```

1. Complete the following fields:

- SAR File Library
- SAR Delivery Type

Caution: The SAR file library contains the Work Order system files (F4801 and F4802). If you use the Work Order application, or if the F4802 file has different record types than what version control needs, you must create a library that contains new F4801 and F4802 files for version control purposes only. Specify this new library name in the SAR File Library field.

Note: If you set the SAR Delivery Type field to *PROMPT, the Maintain User Default SAR Information form displays whenever you change a source code member or control table.

Figure 9–2 Maintain User Default SAR Info screen

```

9812  Maintain User Default SAR Info
Action. . . . . C
Repository Rec. P9242
SAR Number. . . . .          Transfer. . . . . Q
Revision Note . . . . .
Enter=Continue    F24=More

```

2. Complete the following optional field:

- SAR Number

9.2.1 What You Should Know About

Topic	Description
SAR number and delivery type combinations	<p>The information you provide for the SAR Number and SAR Delivery Type fields affects how the system handles SAR logging.</p> <p>If you do not provide a SAR number, and set the SAR Delivery Type field to *PROMPT, the Maintain User Default SAR Information form prompts you for the SAR number whenever you change a source code member or control table.</p> <p>If you provide a SAR number, and set the SAR Delivery Type field to *DFT, the system creates SAR log entries automatically without your input.</p> <p>If you provide a SAR number, and set the SAR Delivery Type field to *PROMPT, the Maintain User Default SAR Information form prompts you to change the SAR number, if necessary, whenever you change a source code member or control table.</p>
Invalid SAR delivery types	*LOG and *NONE are not valid for the SAR Delivery Type field when you use the Version Control system.

If you set the SAR Delivery Type field to *PROMPT, the Maintain User Default SAR Information form displays whenever you change a source code member or control table.

9.3 Selecting Types of SAR Information to Log

To select types of SAR information to log

In addition to setting up user input options for SAR logging, select the types of SAR information you want to log.

1. From the Version Control menu (G9261), access the processing options for Edit and Promote.
2. Make the following changes:

Item	Description
SAR Logging (1)	<p>Specify Y if you want to track SARs that are associated with JD Edwards World source code and control file development only. Specify N if you want to track SARs that are associated with all software development. Leave this processing option blank to disable SAR logging and, therefore, version control.</p> <p>If you specify Y, the SAR log keeps track of development automatically. It tracks changes to menus that start with "A" or "G" only. For DREAM Writer, it tracks changes to XJDE or ZJDE versions only. When you transfer these versions, the user ID associated with them changes to DEMO.</p> <p>In addition, the SAR logging program runs a double-byte analysis against your RPG programs if you set this processing option to Y.</p> <p>If you specify Y, you also must indicate the name of the library that contains your SAR files. The default library name is JDCOMDATA.</p>

Item	Description
DREAM Writer Copy (2)	Specify Y to track changes to DREAM Writer versions (XJDE and ZJDE versions only). Specify N to not track these changes. If you track changes, the user ID changes to DEMO automatically when you transfer the versions.

9.4 Accessing SAR Log Inquiry

The SAR Log Inquiry includes several functions:

- Inquiry by user ID or SAR number with date range
- Exit to a maintenance program for the record type
- Exit to SAR detail
- Print option that allows for DREAM Writer selection

There are two ways to access the SAR Log Inquiry.

To access the SAR Log Inquiry

1. To access the SAR Log Inquiry, select one of the following methods:
 - Choose SAR Inquiry from Menu G9362
 - Choose SAR Log Inquiry from the Repository Services form (F6 in SVR)

Figure 9–3 Developer's Workbench screen

```

G9362                J.D. Edwards & Company                JD ED
Sr Programmers      Developer's Workbench
 1. Generic Record Copy      13. Pre-compiler Commands
 2. Software Scan & Replace  14. Compile Multiple Objects
 3. Single JDE Message Update 15. Optimize Programs (CL & RPG)
 4. Global Update of File Text 16. Print Source
 5. Message Tester           17. Copy ADW Files to Production
 6. Copy DD,VO,DW,UDC,SVR,Menus 18. Generate Pgm Specs from ADW
 7. File Field Description
 8. SAR Log Inquiry

Selection or command
====>

```

Figure 9–4 Software Versions Repository screen

```

9801                               Software Versions Repository
Action Code. . . -
Member ID. . . 
Description. . . 
Function Code. . . 
Function Use. . . 
System Code. . . 
Reporting System. . . 
Base Member Name. . . 
Maint/RSTDSP. . . Omit Opt
Copy Data (Y/N). . Optional

O Source      Object      Source
P Library     Library     File

-----
-----
-----
-----
-----
-----
-----
-----
-----
-----
-----

985001-----Repository Services-----
*1* Available Services
- Data Dictionary
- Menus
- Vocabulary Overrides
- Function Key Definitions
- Processing Options
- User Defined Codes
- Edit System Helps
- CASE Profiles
- SAR Log Inquiry
- Copy DD,VO,DW,UDC,SVR,Menus

-Sel:---1=Select-----F12=Previous-----

Opt: 1=Browse 2=Edit 3=Copy 5=SAR 8=Print 9=Dlt 10=Design 14=Crt F24=More

```

- The new SAR Log Inquiry form displays.

Figure 9–5 SAR Log Inquiry screen

```

9810                               SAR Log Inquiry
Action Code. . I
User ID. . . . FRAZZINI
SAR Number. . . 
From Date. . . 
To Date. . . 

O A
P C Ty Item      Number      Revision Note      Time      Date      User
-----
- C DG AN8      5
- D SV F0101JA   12
- D SV F0101LH   12
- D SV F0911LD   12
- D SV F0911LH   12
- D SV F92801    12
- D SV F92801LA  12
- C HT 100PS00   12
- C ES PDAN      5 Added Member to SVR
- D SV PDAN      5 Deleted Member
- C SV PINDEX    12
- C ES PINDEX    12
- C PG P928200   12
- C DD P928200   12
pt: 2=Edit 5=Work SAR 9=Delete F21=Print F24=More

```

- Complete one or more of the following fields:

- User ID
- SAR number
- Date range

Records matching the search criteria are displayed.

Field	Explanation
AC (Action)	The action that was taken on this record. The standard action code values apply.
Ty (Record Type)	The type of record that was updated. Use F1 to display all valid record types stored in User Defined Code 98/RT.
Item	The identification number (program number, file number, report number) assigned to any element of the software. These items are the members that reside in the Software Versions Repository or other repositories such as the Data Dictionary, Vocabulary Overrides, and the like.

Field	Explanation
SAR Number	The SAR number under which this change was made. This field can be updated on this video.
Revision Note	A user defined description field to further clarify the change made. This field can be updated on this video.
Time	The time at which the change was made.
Date	The date on which the change was made.
User	The user who made the change.

9.4.1 Selection Exits from the SAR Log Inquiry

The following is a list of selection exits from the SAR Log Inquiry form and an explanation of the effects of each selection.

Exit	Explanation
2 - Edit	Allows for maintenance of the record type. What program is accessed is based on the record type. For example, if the record type is 'DD', this exit will take the user to the Data Dictionary program.
5 - Work SAR	Exits to the SAR associated with the SAR log entry.
9 - Delete	Allows the user to delete entries from the SAR log.

Note: If you entered this program from the Repository Services form from the Software Versions Repository program, selection exit 2 does not function with record types "SV" or "PG" as these record types attempt to call the Software Versions Repository, which causes a recursive call error.

9.4.2 Function Key Exits from the SAR Log Inquiry

Function Key	Description
F5	ASI Entry Exits to Application Specific Instructions form for use during a software upgrade. You need the F0098 file to do this.
F6	Access Repository Services Pressing this key displays a form that provides access to the other repository services, except for SAR Log Inquiry.
F21	Print Allows you to print a SAR log report. Exits to a DREAM Writer versions list.

9.5 Summary of the SAR Log Inquiry

The SAR Log Inquiry has the following features and restrictions:

- Uses the file F9810.

- If you do not want to use the SAR Logging feature at all, specify *NONE in the SAR Delivery Type field for all CASE Profile records.
- To use the SAR Logging feature, you must specify a value of *LOG, *DFT, or *PROMPT in the SAR Delivery Type field for all CASE Profile records.
- The SAR Logging feature records any changes that you make to the Data Dictionary, Vocabulary Overrides, User Defined Codes, and so forth.
- The SAR Log Inquiry program allows you to see what changes you make to any of the above.
- The SAR Log Inquiry program has Function Keys and Selection Exits which allow you to change the SAR Log records in the SAR Log file (F9810) or to exit to the maintenance program for the change you made.

For example, exit to the Data Dictionary program if the record indicates a Data Dictionary item was added or updated.

Work with Promotion Paths and Projects

This chapter contains these topics:

- [Section 10.1, "Working with Promotion Paths and Projects"](#)
- [Section 10.2, "Understanding Promotion Paths"](#)
- [Section 10.3, "Defining a Promotion Path"](#)
- [Section 10.4, "Defining a Project"](#)

10.1 Working with Promotion Paths and Projects

A promotion path defines how a project's source code members and control file data will move from one environment to another. An environment consists of source code members and control file data. For source code members, the environment consists of:

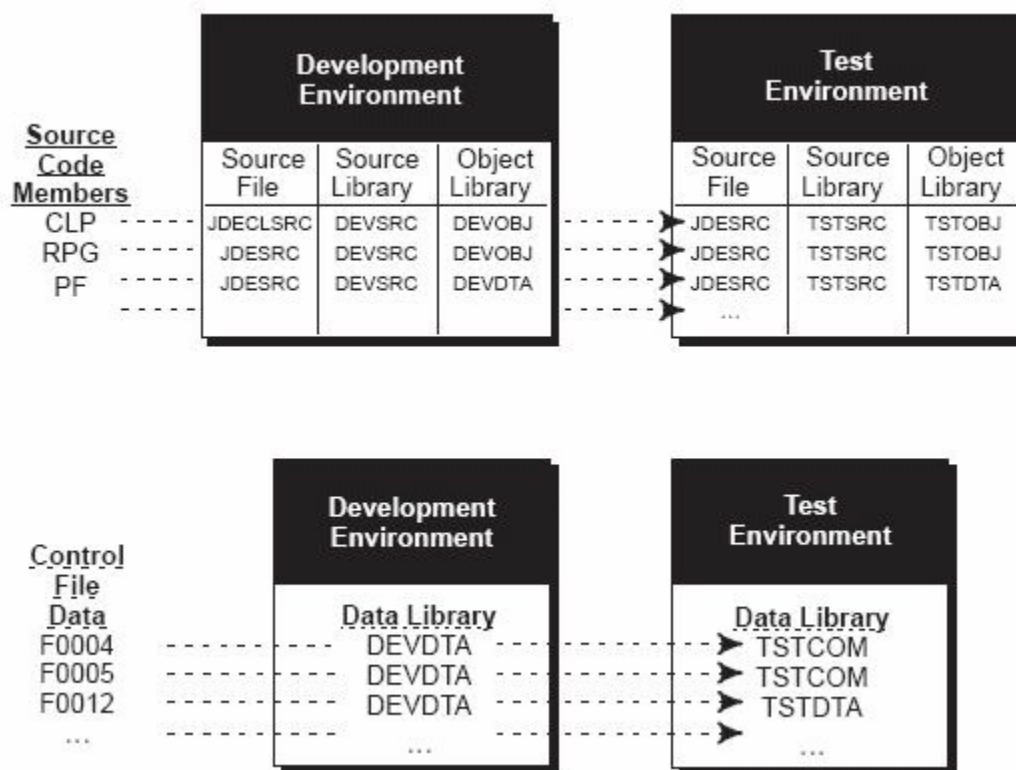
- A source file
- A source library
- An object library

For control file data, the environment consists of a data library.

10.2 Understanding Promotion Paths

A promotion path specifies the current locations of source code members and control file data and where they will be moved. For example, promoting a project's source code members and control file data from a development environment to a test environment could look similar to the following illustrations.

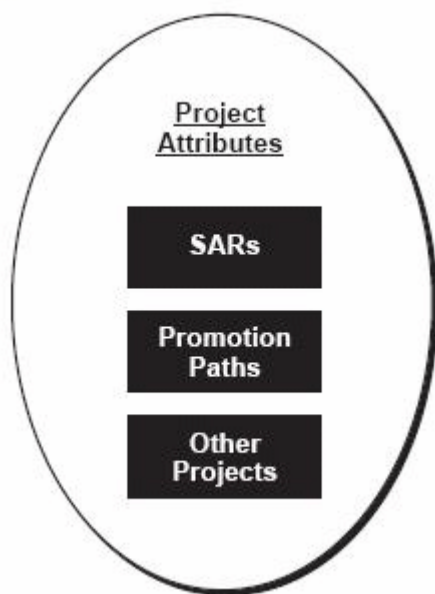
Figure 10–1 Promoting a Project's Source Code Members and Control File Data from Development to Test



Each move between two environments requires that you define a unique promotion path.

A project is a collection of software and data you want to group together for promotion. A project is defined by the following characteristics:

- SARs that are associated with the project
- Promotion paths that determine the movement of the project software and data between environments
- Other projects that are attached to the project

Figure 10–2 Project Attributes

10.2.1 Before You Begin Defining a Promotion Path

- Verify that the SARs and promotion paths you want to associate with a project have been set up.
- The SAR system uses the Work Order files (F4801 and F4802). If your production environment uses these files, and if the F4802 file has different record types than what version control needs, define a separate library that contains these files for version control purposes only.

10.3 Defining a Promotion Path

Several steps are involved in defining promotion paths. Complete the following tasks:

- Locate a promotion path
- Add a promotion path
- Define a promotion path for source code members
- Define a promotion path for control tables

From the Version Control menu (G9261), select Manage Promotion Paths.

Figure 10–3 Manage Promotion Paths screen (part 1)

```

92403                      Manage Promotion Paths          Code 1 . . . . .
Promotion Path . JDF73                                     Code 2 . . . . .
                                                           Code 3 . . . . .
                                                           Code 4 . . . . .
                                                           Code 5 . . . . .

O Promotion      Description      Release
P Path           Number
- JDF73          Transfer to JDF73   A73
- JDF73T         'T' file transfer to JDF73   A73
- JDF73TEC       Transfer to JDF73 SECURE A73
- JDU71          Transfer to JDU71    A71X
- JDX71          Transfer to JDX71    A71X
- T130892PC2     Utility CIS - PCCPY   A71X
- T130892PC3     Utility CIS - PCCPY   A71X
- T130892PC4     Utility CIS - PCCPY   A71X
- T130892PC5     Utility CIS - PCCPY   A71X
- T130892PC6     Utility CIS - PCCPY   A71X
- T130892PC7     Utility CIS - PCCPY   A71X
- T130892PC8     Utility CIS - PCCPY   A71X
- T130892PC9     Utility CIS - PCCPY   A71X
- UQF62          UQF build for A6.2    A62
- UQF71          UQF build            A71
- VCT            Version control training A71

Opt: 1=Change  2=Members  3=Ctl Files  F5=Add Path  F24=More Keys

```

Figure 10–4 Manage Promotion Paths screen (part 2)

```

92403                      Manage Promotion Paths          Code 1 . . . . .
Promotion Path . JDF73                                     Code 2 . . . . .
                                                           Code 3 . . . . .
                                                           Code 4 . . . . .
                                                           Code 5 . . . . .

O Promotion      Description      Release
P Path           Number
- JDF73          Transfer to JDF73   A73
- Code 1 .      Code 2 .      Code 3 .      Code 4 . CUE Code 5 . JDE

```

To locate a promotion path

Select one of the following methods to locate a promotion path:

1. On a blank Manage Promotion Paths form, press Enter.
The screen displays a complete list of promotion paths.
2. On Manage Promotion Paths, enter the path name in the Promotion Path field.
The screen displays the path name. If the promotion path does not exist, the screen displays the path name that is closest alphabetically.

To add a promotion path

1. On the Manage Promotion Paths form, press F5 (Add Path).

Figure 10–5 Promotion Path screen

```

9240                                Promotion Path
Action Code . . . I
Promotion Path . _____
Description . . . _____
Release . . . . _____

Code 1 . . . . . _____
Code 2 . . . . . _____
Code 3 . . . . . _____
Code 4 . . . . . _____
Code 5 . . . . . _____

F9=Redisplay  F10=Members  F11=Ctl Files  F24=More Keys

```

2. Complete the Promotion Path form:

- Add a new path name, a path description, and a release level.
- Use the Code 1 through 5 fields for additional classifications.
- Code 1 through 5 fields are user defined in system 92, types E1, E2, E3, E4, and E5.
- Specify the status of the promotion path in the Code 4 field.
- Field-sensitive help (function key F1) provides valid values for the Code 4 and 5 fields.
- Specify the type of promotion environment in the Code 5 field.

To define a promotion path for source code members

1. Locate Promotion Path Members using one of the following methods:

- On the Manage Promotion Paths form, locate the promotion path you want to define.
 - Enter 2 (Members) in the OP (Option) field next to the promotion path name.
- On the Promotion Path form, press F10 (Members).

Figure 10–6 Promotion Path Members screen

```

92401                                Promotion Path Members
Action Code . . . I
Promotion Path . JDF73 Transfer to JDF73

O Mbr                               From Environment      To Environment
P Type  Src File  Src Libr  Obj Libr  Src File  Src Libr  Obj Libr
--
ASH      SECURE   JDFSRC73  JDFCBI73  JDFSRC    JDFSRC73  JDFCBI73
CLP      JDFSRC   PGFSRC73  PGFCBI73  JDFSRC    JDFSRC73  JDFCBI73
CMD      JDFSRC   PGFSRC73  PGFCBI73  JDFSRC    JDFSRC73  JDFCBI73
COPY     JDFCPIY   PGFSRC73  JDFCPIY   JDFCPIY   JDFSRC73
DSPF     JDFSRC   PGFSRC73  PGFCBI73  JDFSRC    JDFSRC73  JDFCBI73
LF       JDFSRC   PGFSRC73  PGFDTA73  JDFSRC    JDFSRC73  JDFDTA73
LFS      SECURE   PGFSRC73  PGFDTA73  SECURE    JDFSRC73  JDFDTA73
PF       JDFSRC   PGFSRC73  PGFDTA73  JDFSRC    JDFSRC73  JDFDTA73
PFS      SECURE   PGFSRC73  PGFDTA73  SECURE    JDFSRC73  JDFDTA73
PLI      SECURE   PGFSRC73  PGFCBI73  SECURE    JDFSRC73  JDFCBI73
PRTF     JDFSRC   PGFSRC73  PGFCBI73  JDFSRC    JDFSRC73  JDFCBI73
PRTS     JDFSRC   PGFSRC73  PGFCBI73  JDFSRC    JDFSRC73  JDFCBI73
RPG      JDFSRC   PGFSRC73  PGFCBI73  JDFSRC    JDFSRC73  JDFCBI73
RPGS     JDFSRC   PGFSRC73  PGFCBI73  JDFSRC    JDFSRC73  JDFCBI73

Opt: 1=Copy  2=Target  F11=Ctl Files  F13=CASE Profile  F24=More Keys

```

The From Environment area on the Promotion Path Members form shows the current locations of the source and object code. The To Environment area shows the locations to which the code will be moved.

2. Specify source files and library names for each member type you list on this screen.
 - To display valid member types and their descriptions, press F1 while your cursor is in a Mbr Type field. The member types are defined in the Function Codes user defined code table (98/FN).
 - To copy source file and library names from one member type to another, type 1 (Copy) in the OP (Option) field next to the member type you want to copy. Type 2 (Target) in the OP fields next to the member types you want the information copied to, and press Enter. You can specify multiple targets.

The following chart shows some of the function keys available on this screen.

Key	Description
F9	Redisplays the record for the previously-changed path.
F11	Displays the Promotion Path Control Files form.
F13	Displays the CASE Profiles form.
F14	Retrieves the source file, source library, and object library from your CASE profile and fills in the From environment. This overwrites any information currently in the fields.
F15	Duplicates the source file and library names from the first member type to the remaining member types.

10.3.1 What You Should Know About

Topic	Description
Copying an existing promotion path	If you copy an existing promotion path to create a new path, be sure that the source files and library names for the members are correct for the new path.
Changing library names	To change library names, enter the new library names over the current ones.

To define a promotion path for control files

1. Locate the Promotion Path Control Files using one of the following methods:
 - On Manage Promotion Paths (P92403), locate the promotion path you want to define and enter 3 (Ctl Files) in the OP (Option) field next to the promotion path name.
 - On the Promotion Path (F5 from P92403) form, press F11 (Ctl Files).
 - On the Promotion Path Members form (Opt 2 from P92403), press F11 (Ctrl Files).

- Assign project SARs

From the Version Control menu (G9261), choose Manage Projects.

Figure 10–8 Manage Projects screen (part 1)

92413

Manage Projects

Project

Client

Originator

Assigned To.

Code 1

Code 2 TEC

Code 3

Code 4

Code 5

O

P Project Description Client Orig Assigned

- REINSTALL Simplified Reinstall Process

- TEC Tech Foundation Corrections

- TECHENH Tech Foundation Enhancements

- USP User Based Pricing

- UPGRADE Upgrade Enhancements/fixes 256006 878411 878411

- VC Version Control 875561

- 1055020 Merge PO Display Level

- 4 BYTE SYS 4 Byte System Code 878411 2211696

-

-

Opt: 1=Details 2=Paths 3=SARs F5=Add Project F24=More Keys

Figure 10–9 Manage Projects screen (part 2)

92413

Manage Projects

Project

Client

Originator

Assigned To.

Code 1

Code 2 TEC

Code 3

Code 4

Code 5

O

P Project Description Client Orig Assigned

- REINSTALL Simplified Reinstall Process

Code 1 . 300 Code 2 . TEC Code 3 . Code 4 . Code 5 .

To locate a project

Locate a project using one of the following methods:

1. On a blank Manage Projects form, press Enter.
 - A complete list of projects displays.
2. On the Manage Projects form, enter the project name in the Project field.
 - The project name displays on the form. If the project does not exist, the project name that is closest alphabetically displays on the form.

To add a project

1. On Manage Projects, choose Add Project.

Figure 10–10 Software Development Project screen

```

9241                      Software Development Project
Action Code. . . . I
Project. . . . .
Description. . . . .
Parent Project . . . . .
Edit File. . . . .

Client . . . . . Requested. . . . .
Originator . . . . . Planned Comp. . . . .
Assigned To. . . . . Date Assigned. . . . .
Auth List. . . . .
Design Doc . . . . .

Code 1 . . . . .
Code 2 . . . . .
Code 3 . . . . .
Code 4 . . . . .
Code 5 . . . . .

F9=Redisplay  F10=Promotion Paths  F11=Project SARs  F24=More Keys

```

2. On the Software Development Project form, do the following:
 - Enter a new project name.
 - Enter a project description.
 - Enter any other information you want to associate with the project.
 - Complete the Code 1 through 5 fields for additional classifications.
 - The Code 1 through 5 fields are user defined in system 92, types P1, P2, P3, P4, and P5.
3. If you want to attach this project to a parent project, specify the parent project name in the Parent Project field.

The following chart shows some of the function keys available on this form.

Key	Description
F9	Redisplays the record for the previously-changed project.
F10	Displays the Project Promotion Path form.
F11	Displays the Project Elements form.
F14	Displays the generic text associated with this project, and gives you access to text model selections.

You must assign promotion paths and SARs to the project you set up here. The following sections explain how to assign them.

To assign promotion paths

1. Locate the project to which you want to assign promotion paths using one of the following methods.
 - On Manage Projects selection (Option 4 on menu G9261), locate the project to which you want to assign promotion paths.
 - In the OP (Option) field next to the project name, enter 2 (Paths)
 - On Software Development Project (Manage projects, F5), press F10 (Promotion Paths).

Figure 10-11 Project Promotion Paths screen

```

92411                      Project Promotion Paths
Action Code. . . . . I
Project. . . . . TEC      Tech Foundation Corrections

O Promotion
P  Path      Description      Release
- A62CUM     Transfer to current A62 Cum      A62
- A62PC000TI User based pricing              A62
- A62PREV     Transfer to previous A62 Cum      A62
- A72CUM     Transfer to current A71 Cum      A71
- A71PREV     Transfer to previous A71 Cum      A71
- A72CUM     Transfer to current A72 Cum      A72
- JDF62      Transfer to JDF62                      A62
- JDF62TEC   Transfer to JDF62-SECURE              A62
- JDF71      Transfer to JDF71                      A71
- JDF71TEC   Transfer to JDF71-SECURE              A71
- JDF73      Transfer to JDF73                      A73
- JDF73TEC   Transfer to JDF73 SECURE              A73
- VCTL       Version control Update              A73
-
-
-
Opt: 1=Details  2=Members  3=Ctrl Files  F11=Project SARs  F24=More Keys

```

- Specify the promotion paths you want to assign to this project.

To display the available promotion paths, press F1 (Help) while the cursor is in a Promotion Path field.

Some of the function keys available on this form include:

- F9 - Redisplays the record for the previously-changed project.
- F11 - Displays the Project Elements form.

Options available on this form include:

- 1 - Edit the promotion path details.
- 2 - Edit the promotion path members.
- 3 - Edit the promotion path control files.

To assign project SARs

SARs are one element of a project; other projects can also be elements of a project.

- Access the Project Elements form using one of the following methods:
 - On the Version Control menu (G9261), choose Edit and Promote.
 - On the Manage Projects form, locate the project to which you want to assign elements.
 - Enter 3 (SARs) in the OP (Option) field next to the project name.
 - On the Software Development Project form, press F11 (Project SARs).
 - On the Project Promotion Paths form, press F11 (Project SARs).

Figure 10-12 Project Elements screen

```

92412                                Project Elements
Action Code. . . . . I                SAR #. . . . .
Project. . . . . TRC                Tech Foundation Corrections    Project. . . . .
Promotion Path . . . . .                Status . . . . . S/P _
O Project T
P Element Y      Description          St      Status
- 00718047 S 1 Menu Job Stream Int/Bth Mix 01 Complete - in next release.
- 00731073 S JDEDBG - V2R3 Misc. Fixes 26 Test in Demo
- 00735672 S Can't Chg Value--DD Item Array 01 Complete - in next release.
- 00736245 S User Defined Code Security 26 Test in Demo
- 00863261 S User Based Pricing 23 Manager Review
- 00907482 S ASI Rpt and Screen 4 Digits 26 Test in Demo
- 00910451 S DDP RJE Code Correction CL 7.1 01 Complete - in next release.
- 00913176 S Version Control - Build PTF 23 Manager Review
- 00915577 S Quick Start - Vocab Overrides 01 Complete - in next release.
- 00917732 S Auto Build of JDE Msg File/JLF 25 Rework
- 00932827 S Menu Integrity rpt/sys 55-59 01 Complete - in next release.
- 00945565 S ASI Rpt Confusing When No ASIs 26 Test in Demo
- 00953602 S F6 Copy from ASI -Prt Override 01 Complete - in next release.
- 00955229 S Next Number Description-00 Sys 01 Complete - in next release.
- 00958278 S Validation rpt-prt file names 01 Complete - in next release.
- 00966438 S Action Code Security 01 Complete - in next release.
Opt: 1-SAR 2-SAR Log 3-Edit 4-Promote F10=Project Paths F24=More

```

The Project Elements form displays the elements (usually SARs) assigned to the project.

- Specify the elements (usually SARs) you want to assign to this project. You can also assign projects, which have SARs associated with them, as elements on this screen.

In the TY (Type) fields, specify the corresponding element types (S for SARs, and P for projects). Some of the function keys available on this screen include:

Key	Description
F9	Redisplays the record for the previously-changed project.
F10	Displays the Project Promotion Paths screen.

Options available on this screen include:

- 1 - Displays or edits the SAR detail.
- 2 - Displays or edits the SAR log. The SAR Log Transfer screen displays, which lets you edit the SAR log and update the project SARs. For more information about updating the SARs by using this log, see [Section 11.2, "Update the SARs"](#) in this publication. For information about the SAR log, refer to the Computer Assisted Design Reference Guide.
- 3 - Displays the Pre-Promotion Edit History form. For information about this function, see [Section 11.2, "Update the SARs"](#) in this publication.
- 4 - Promotes a project. For information about this function, see [Section 11.1, "About Promoting a Project"](#) in this publication.
- 5 - Displays the promotion history of a SAR ('Z' record).
- 6 - Displays or edits notes associated with a SAR (for JD Edwards World environments only; '*' record).

Promote a Project

This chapter contains these topics:

- [Section 11.1, "About Promoting a Project"](#)
- [Section 11.2, "Update the SARs"](#)
- [Section 11.3, "Validating a Promotion Path"](#)
- [Section 11.4, "Promoting a Project"](#)

11.1 About Promoting a Project

After you create a project, link promotion paths and SARs to it, and complete project development, you are ready to begin the promotion process.

The SAR system uses the Work Order files (F4801 and F4802). If your production environment uses these files, or if the F4802 file has different record types than is needed by version control, define a separate library that contains these files for version control purposes only.

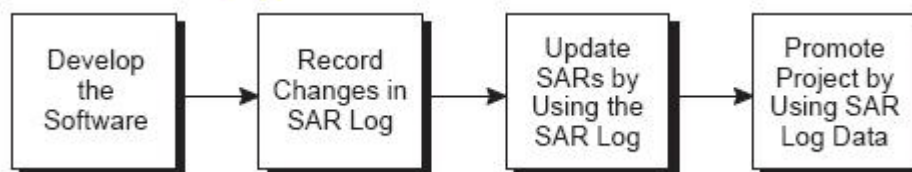
See Also:

- [Section 10.3, "Defining a Promotion Path"](#)

11.2 Update the SARs

The SARs, which are contained in the Work Order Header file (F4801), have detailed information in the Work Order Detail file (F4802). You must update the information in the SARs to reflect software developments that are recorded in the SAR log.

Figure 11-1 Process to Update SARs



When you developed the software, the changes were recorded in the SAR log automatically. You now must update the F4802 file.

From the Version Control menu (G9261), choose Edit and Promote.

Figure 11–2 Edit and Promote screen

```

92412                                Edit and Promote
Action Code. . . I                    SAR #. . 1079777
Project. . . . TEC                    Tech Foundation Corrections
Promotion Path . JDF73                Transfer to JDF73
Project. . . . .                      Project.
Status . . . . .                      Status . . S/P

O Project T
P Element Y Description St Status
- 01079777 S Multiple Jobs Submitted 23 Manager Review
- 01081666 S Release Specific Transfers 23 Manager Review
- 01083573 S Help Window Mods A73 26 Test in Demo
- 01085292 S Unable to use A Action Code 06 Returned - Already reported
- 01087552 S Data Selection - HMCU 23 Manager Review
- 01088104 S V3R1 CRTCPGM/CRTENDC 28 A test complete
- 01088163 S Handle special char for DBCS 01 Complete - in next release.
- 01089414 S Localization Issues in A/B 01 Complete - in next release.
- 01093536 S No previous item displayed 23 Manager Review
- 01099807 S Finalize Version Control 23 Manager Review
- 01101364 S Video Illustration 23 Manager Review
- 01102615 S J97UPGRADE Command Validation 23 Manager Review
- 01104004 S DW Merge Database-No Merge Opt 26 Test in Demo
- 01105226 S WN-Reads all versions at once 28 A test complete
- 01107601 S Don't delete SAR Log if Trf er 23 Manager Review
- 01113921 S Variable Length Field Support 26 Test in Demo
Opt: 1=SAR 2=SAR Log 3=Edit 4=Promote 5='Z' F10=Proj Paths F24=More

```

To update the SARs

1. On the Edit and Promote form, inquire on the project you want to promote.
2. In the OP (Option) field next to the project SAR you want to update, enter 2 (SAR Log).

The SAR Log Transfer form displays, which lists all added or changed records logged in the SAR log (F9810) according to record type. The SAR Detail Status field shows whether the record has been updated in the F4802 file.

Figure 11–3 SAR Log Transfer screen

```

9242                                SAR Log Transfer
SAR Number . . . 1079777 Multiple Jobs Submitted
Record Type. . .
and/or Member. .
O
P Record Type Primary Secondary Data File T A
Log Item Log Item Library R C SAR Detail Sta
- M - Data Dictionary 4888 JDFCTL73 1 A Updated
- M - Data Dictionary 4889 JDFCTL73 1 A Updated
- C - Modified Source J9242S JDFSRC73 1 A Updated
- C - Modified Source J98901B JDFSRC73 1 A Updated
- C - Modified Source J98901T JDFSRC73 1 A Updated
- C - Modified Source P924124 JDFSRC73 1 A Updated
- C - Modified Source P9242 JDFSRC73 1 A Updated
- C - Modified Source P9242D JDFSRC73 1 A Updated
- C - Modified Source P924210 JDFSRC73 1 A Updated
- C - Modified Source P98905 JDFSRC73 1 A Updated
- C - Modified Source P98907 JDFSRC73 1 A Updated
- F - Software Reposit J9242S JDFCTL73 1 A Updated
- F - Software Reposit P9242D JDFCTL73 1 A Updated
Opt: 1=Details 9=Delete F5=Add F10=Update SAR F24=More Keys

```

If this screen lists many SAR log records, you can narrow your search by entering information in the Record Type and the and/or Member fields.

To view the details of a SAR log item, enter 1 (Details) in the OP (Option) field next to the item. On the form that displays, you can edit the SAR details. If the SAR logging system does not log an item that you want to include, press F5 (Add) from the SAR Log Transfer form to add it.

3. To update the F4802 file, press F10 (Update SAR).

Before you update a SAR, verify that each SAR log record should be transferred with the SAR. Change or delete those that are associated incorrectly with the SAR. To display all records with data that can be transferred (TR field value is 1) or with test data (TR field value is 0), press F16 (Display Update Capable/All Items). Update only those records that should be transferred with this SAR.

The system creates or updates the records in the SAR file that is located in the SAR library you indicated in the Edit and Promote processing options (not the SAR library appearing in your library list).

11.3 Validating a Promotion Path

Before you promote a SAR, you must perform a pre-promotion edit, or validation, against the promotion path that will be used for this SAR.

To validate a promotion path

- 1. From the Edit and Promote form, inquire on the project you want to promote.
- 2. In the Promotion Path field, type the name of the promotion path you want to use for your project.
- 3. In the OP (Option) field next to the project SAR you want to update, enter 3 (Edit).

If you did not choose a promotion path for the project, the Project Promotion Paths form lists all promotion paths defined for the project.

Figure 11-4 Project Promotion Paths screen

92411W Project Promotion Paths

Project . . . TEC Tech Foundation Corre

Q	Path Name	Description
-	A62CUM	Transfer to current A62 Cum
-	A62PC000TI	User based pricing
-	A71CUM	Transfer to current A71 Cum
-	A72CUM	Transfer to current A72 Cum
-	JDF62	Transfer to JDF62
-	JDF62TEC	Transfer to JDF62-SECURE
-	JDF71	Transfer to JDF71
-	JDF71TEC	Transfer to JDF71-SECURE

Opt: 4=Select F24=More Keys

- 4. In the O (Option) field next to the promotion path you use to promote the project, enter 4 (Select). If you have run pre-promotion edits previously for this SAR, the Pre-Promotion Edit History form lists them. Otherwise, this form is blank.

Figure 11-5 Pre Promotion Edit History screen

9243 Pre Promotion Edit History

Project TEC Tech Foundation Corrections

SAR 1079777 Multiple Jobs Submitted

Promotion Path . JDF73 Transfer to JDF73

O	Date	Time	User ID	Hrd No.
P				Err Err
-	01/22/96	13:18:24	TFRCTL6	
-	01/22/96	9:17:28	CHAN	8
-	01/16/96	12:39:59	CHAN	4

Opt: 1=Details F5=Perform Edit F24=More Keys

- 5. To view the errors associated with a pre-promotion edit, enter 1 (Details) in the OP (Option) field next to the desired history record.

Figure 11–6 Pre Promotion Edit Details screen

```

92431                                Pre Promotion Edit Details
Project . . . . . TEC                Tech Foundation Corrections
SAR Number . . . 1079777             Multiple Jobs Submitted
Promotion Path . JDF73               Transfer to JDF73
Date of Edit . . 01/22/96
Time of Edit . . 9:17:28

O R                                  Member      Err
P T Description Name 2nd Item Key Description T
- C Members Affe J9242S              1946 Object Not Found W
- C Members Affe J98901B             1946 Object Not Found W
- C Members Affe J98901T             1946 Object Not Found W
- C Members Affe P924124             1946 Object Not Found W
- C Members Affe P9242               1946 Object Not Found W
- C Members Affe P9242D              1946 Object Not Found W
- C Members Affe P98905              1946 Object Not Found W
- C Members Affe P98907              1946 Object Not Found W

Opt: 1=Error Details      F24=More Keys

```

- From the Pre-Promotion Edit History form, press F5 (Perform Edit) to perform the pre-promotion edit.
- Correct any errors and perform the edit until no errors occur. You do not need to resolve warnings that can occur.

Error Codes

The following table shows a partial list of errors and how to resolve them.

Error Code	Cause and Resolution
0020	<p>Cause: You entered a "From" library that does not exist or you are not authorized to use.</p> <p>Resolution: Correct the library name, create the library, or get authorization to use it.</p>
0092	<p>Cause: A database table or member could not be opened because it did not exist, a conflicting lock state held by another job exists, or you are not authorized to open it.</p> <p>Resolution: Check your job log messages.</p>
1046	<p>Cause: An XJDE or ZJDE version was expected but not found.</p> <p>Resolution: If an XJDE or ZJDE version should exist, create it. If not, then change the processing option for form ID P926304.</p>
1370	<p>Cause: You entered a "From" table that does not exist or you are not authorized to use.</p> <p>Resolution: Review the "From" library for the promotion path control table. Either correct the library name or create the table.</p>
1371	<p>Cause: You entered a "To" table that does not exist or you are not authorized to use.</p> <p>Resolution: Review the "To" library for the promotion path control table. Either correct the library name or create the table.</p>
1372	<p>Cause: A key you wanted to copy from the "From" library does not exist.</p> <p>Resolution: Review the "From" library for the promotion path control table. Either correct the library name or re-enter the data record.</p>

Error Code	Cause and Resolution
2892	<p>Cause: A "From" library name is the same as the corresponding "To" library name.</p> <p>Resolution: Review the "From" and "To" libraries for the promotion path control table. Make the appropriate changes.</p>
4395	<p>Cause: No records exist in the Promotion Path Members file (F92401) for the promotion path you specified.</p> <p>Resolution: Complete the Promotion Path Members form for the promotion path.</p>
4396	<p>Cause: No records exist in the Promotion Path Control file Members file (F92402) for the promotion path you specified.</p> <p>Resolution: Complete the Promotion Path Control Files form for the promotion path.</p>
4397	<p>Cause: No records exist in the SAR Log table (F9810) for the project you specified.</p> <p>Resolution: In the project master record, change the based-on file for the Pre-Promotion Edit to the SAR Detail table (F4802), then manually update the SAR Detail records for the members and control file records updated by this project.</p>
4400	<p>Cause: No record exists in the Promotion Path Members file (F92401) for the function code of the member you want to promote.</p> <p>Resolution: For the specified promotion path, enter the environment for the function code of the member.</p>
4402	<p>Cause: No record exists in the Promotion Path Control Files file (F92402) for the control table you want to promote.</p> <p>Resolution: For the specified promotion path, enter the environment for the control file of the record.</p>
4439	<p>Cause: An error occurred while you attempted to copy a source code member.</p> <p>Resolution: Check for valid library, table, and member names, as well as options in the CPYF command. Check the job log for the error message ID.</p>

11.4 Promoting a Project

The promotion process involves transferring members and copying control file data.

11.4.1 Before You Begin

- Before you promote the project, be sure you have edited all items that appear on the SAR Log Transfer screen. Otherwise, the SAR Log Transfer screen displays when you attempt to promote the project.
- You must update all SAR log records associated with the SAR before you promote it.
- You also must resolve all errors (not warnings) before you promote the SAR.

To promote a project

1. On the Promote a Project form, inquire on the project you want to promote.
2. In the OP (Option) fields next to the project elements you want to promote, enter 4 (Promote).

To select all project elements automatically for promotion, press F14.

3. On the Project Promotion Paths form, enter 4 (Select) in the O (Option) field.

Figure 11–7 Software Transfer screen

```

924124                      Software Transfer
Project. . . . . TEC          Tech Foundation Corrections
SAR Number . . . 1079777      Multiple Jobs Submitted
Promotion Path . JDF73        Transfer to JDF73
Release. . . . . A73          Errors . . 000 Warnings . . 006

O  Member      From Environment      To Environment
P  ID          Src File   Src Libr   Obj Libr   Src File   Src Libr   Obj Libr
- J924147      JDECLSRC   PGFSRC73 PGPOBJ73 JDESRC     JDFSRC73 JDFOBJ73
- P92402       JDESRC     PGFSRC73 PGPOBJ73 JDESRC     JDFSRC73 JDFOBJ73
- P924124      JDESRC     PGFSRC73 PGPOBJ73 JDESRC     JDFSRC73 JDFOBJ73
- P924127      JDESRC     PGFSRC73 PGPOBJ73 JDESRC     JDFSRC73 JDFOBJ73
- P924147      JDESRC     PGFSRC73 PGPOBJ73 JDESRC     JDFSRC73 JDFOBJ73
- V92402       JDESRC     PGFSRC73 PGPOBJ73 JDESRC     JDFSRC73 JDFOBJ73

Opt: 1=Src & Obj 2=Src 3=Obj F4=More F5=Ctl Files F6=Override F15=Edit Hist

```

4. In the OP (Option) fields next to the member IDs, specify whether to transfer:

- Both source and object code (option 1)
- Source code only (option 2)
- Object code only (option 3)

To override the From Environment and To Environment object libraries before you transfer the members, press F6 before you enter options 1, 2, or 3. Enter the names of the object libraries to which you want the members transferred.

The system transfers the members you selected to the target environment.

You can review the batch job that was submitted by this transfer program from the JD Edwards World command line. To display the command line, press F2.

If your promotion is successful, the system deletes all SAR log records for transferred items. It also creates a new SAR log record for each transferred item and associates it with the target library.

5. To copy control file data, press F5 (Control Files) from the Software Transfer form.

Figure 11–8 Control Files Copy screen

```

924127                      Control Files Copy
Project. . . . . TEC          Tech Foundation Corrections
SAR Number . . . 1079777      Multiple Jobs Submitted
Promotion Path . JDF73        Transfer to JDF73
Release. . . . . A73          Errors . . 000 Warnings . . 000

O  Member      Secondary Data Libr Data Libr
P  Record Type Name      Name      From      To      Copy Status
- M - Data Dictio 4888      JDFCTL73 JDFTEM71
- M - Data Dictio 4889      JDFCTL73 JDFTEM71
- F - Software Re J9242S     JDFCTL73 JDFTEM71
- F - Software Re P9242D     JDFCTL73 JDFTEM71

Opt: 1=Copy to target library F13=Copy All F15=Edit History

```

6. In the OP (Option) fields next to the items you want to copy, enter 1 (Copy to target library).

Note: Press F13 to select all items automatically for copying. The system copies the items you selected to the target environment.

Promote Project Updates

This chapter contains these topics:

- [Section 12.1, "Promoting Project Updates"](#)

12.1 Promoting Project Updates

The version control process for project updates includes the following steps:

- "To create the transfer library"
- "To prepare the SAR system"
- "To define promotion paths"
- "To define a project"
- "To update the SARs"
- "To validate the promotion path"
- "To promote the project"
- "To save the transfer library to tape"
- "To restore the transfer library from tape"
- "To print the transfer library report"
- "To load the transfer library"
- "To transfer individual control table records"

To create the transfer library

1. From the Software Install menu (G9262), choose Build Transfer Library.

Figure 12-1 Warning Message screen

```

                                WARNING!!!

If you specify a library that already exists on you system to be used
as a software transfer library it will be cleared prior to use.
All data and objects in that library will be lost.

If the library you specify does not exit it will be created for you.

                                ( F6 - Execute )

```

2. After you read the warning message, press F6 (Execute).

Figure 12-2 Build Transfer Library screen

```

98312                Build Transfer Library      Form ID. . . . P92414
                                                Version. . . . ZJDE0001
                                                Display Level. 4
Build Skeleton Transfer Library
This job has various options described below. Enter the desired values and
press ENTER to continue.

Enter the name of the transfer library          MYLIBRARY
to be created. If the library already
exists it will be CLEARED before use.

                                                F5=Printer Overrides

```

3. In the processing option field, enter a name for the transfer library you want to create.

To prepare the SAR system

To prepare your SAR system, see [Chapter 6, "Work with Software Action Requests"](#) in this guide.

To define promotion paths

From the Version Control menu (G9261), choose Manage Promotion Paths. Use the project update library name as your promotion path name. For information about defining a promotion path, see [Section 10.3, "Defining a Promotion Path"](#) in this guide.

To define a project

To define a project, see [Section 10.4, "Defining a Project"](#) in this guide.

To update the SARs

From the Software Install menu (G9262), choose Edit and Promote. For information about updating a SAR, see [Section 6.1, "About SAR System Setup"](#) in this guide.

To validate the promotion path

From the Software Install menu (G9262), choose Edit and Promote. For information about validating a promotion path, see [Section 11.3, "Validating a Promotion Path"](#) in this guide.

To promote the project

From the Software Install menu (G9262), choose Edit and Promote. For information about promoting a SAR, see [Chapter 11, "Promote a Project"](#) in this guide.

To save the transfer library to tape

1. From the Software Install menu (G9262), choose Save Library to Tape.

Figure 12–3 Save Library screen

```

                                Save Library (SAVLIB)

Type choices, press Enter.

Library . . . . . MYLIBRARY      Name, *NONSYS, *ALLUSR, *IBM
      + for more values
Device . . . . . TAP01          Name, *SAVF
      + for more values

Bottom
F3=Exit  F4=Prompt  F5=Refresh  F10=Additional parameters  F12=Cancel
F13=How to use this display  F24=More keys

```

2. In the Library field, type the name of your transfer library.
3. In the Device field, enter the name of your tape device.

To restore the transfer library from tape

1. From the Software Install menu (G9262), choose Restore Library from Tape.

Figure 12–4 Restore Library screen

```

                                Restore Library (RSTLIB)

Type choices, press Enter.

Saved library . . . . . MYLIBRARY      Name, *NONSYS, *ALLUSR, *IBM
Device . . . . . TAP01          Name, *SAVF
      + for more values

Bottom
F3=Exit  F4=Prompt  F5=Refresh  F10=Additional parameters  F12=Cancel
F13=How to use this display  F24=More keys

```

2. In the Saved Library field, type the name of your transfer library.
3. In the Device field, enter the name of your tape device.

To print the transfer library report

1. From the Software Install menu (G9262), choose Print Transfer Report.

A processing options form displays. Use the cursor keys to display additional processing options.

Figure 12–5 Print Transfer Report screen

```

98312                Print Transfer report          Form ID. . . . P924143
Control File Changes to be Installed              Version. . . . ZJDE0001
                                                    Display Level. 4
This job has various options described below. Enter the desired values and
press ENTER to continue.
Enter name of Transfer Library.                    MYLIBRARY
Print UDCs                1=Yes, 0=No.            1
Print AAI's               1=Yes, 0=No.            1
Print Menus               1=Yes, 0=No.            1
Print Data Dictionary     1=Yes, 0=No.            1
Print Vocabulary/Exits    1=Yes, 0=No.            1
Print CASE specs          1=Yes, 0=No.            1
More...
F5=Printer Overrides

```

2. In the first processing option field, type the name of your transfer library.

Figure 12–6 Print Transfer Report screen

```

98312                Print Transfer report          Form ID. . . . P924143
Control File Changes to be Installed              Version. . . . ZJDE0001
                                                    Display Level. 4
This job has various options described below. Enter the desired values and
press ENTER to continue.
Print Helps               1=Yes, 0=No.            1
Print SVR                 1=Yes, 0=No.            1
Print DREAMWriter         1=Yes, 0=No.            1
Print Next Numbers        1=Yes, 0=No.            1
Bottom.
F5=Printer Overrides

```

3. In the remaining processing option fields, select the types of control files for which you want to print information.
4. To print the report, press Enter.

An example of the Print Install Records report (P924143) follows. It provides the total number of records for each type of control file. It also shows whether the transfer record already exists in your control file.

Figure 12-7 Print Install Records report

924143	JD Edwards World				Page - 2
	Print Install Records				Date - 2/05/16
Record Type	Primary Item	Secondary Item	Description	New/Change	
Menus	G9261	Version Control		Changed	
Menus	G9262	Software Install		Changed	
Total Number of Records for Menus 00002					
-					
-					
DREAMwriter / PO P00PURGE		EJDE0024	Payee Control File Purge	Changed	
DREAMwriter / PO P92412		EJDE0001	Promote a Project	Changed	
DREAMwriter / PO P92413		EJDE0001	Manage Projects	Changed	
DREAMwriter / PO P92414		EJDE0001	Build Skeleton Transfer Librar	Changed	
DREAMwriter / PO P924143		EJDE0001	Control File Changes to be Ins	Changed	
DREAMwriter / PO P924147		EJDE0001	Load Transfer Software	Changed	
DREAMwriter / PO P924801		EJDE0001	SAR Inquiry by Reference	Changed	
Total Number of Records for DREAMwriter / PO 00007					
-					
-					
Vocabulary /Exits R924143			Print Install Records	Changed	
Vocabulary /Exits V9240			Promotion Path	Changed	
Vocabulary /Exits V9240W			Promotion Path Master Window	Changed	
Total Number of Records for Vocabulary /Exits 00030					

To load the transfer library

Before you load the transfer library, you must create new target libraries for the objects, source code, and data files you will transfer. In your target source library, you must create the following multi-member source files:

- JDESRC
- JDECPY
- F98CRTCMD

Load the contents of your transfer library into your target libraries. The process merges control file records into your library files. You also can transfer control file records individually. For more information, see [Transfer Individual Control File Records](#) following this procedure.

1. From the Software Install menu (G9262), choose Load Transferred Library.

Figure 12-8 Warning Message screen

```

WARNING!!!

This program will transfer source code, objects and new data files into the
libraries you name in the processing options. It will also add to or
replace data in the control files in your current library list.

It is recommended that you first run the 'Print Transfer Report' to view
control file changes.

( F6 - Execute )

```

2. After you read the warning message, press F6 (Execute).

A processing options form displays. Use the cursor keys to display additional processing options.

Figure 12–9 Load Transferred Library screen

```

98312                Load Transferred Library      Form ID. . . . P924147
Load Transfer Software      Version. . . . ZJDE0001
                             Display Level. 4

This job has various options described below. Enter the desired values and
press ENTER to continue.

Enter name of Transfer Library or          MYLIBRARY
blank for no transfer.

Enter name of Target Object Library or      MYOBJ
blank for no transfer.

Enter Name of Target Source Library or      MYSRC
blank for no transfer.

EnterName of Target New Files Library or    MYDATA
blank for no transfer.

More...
F5=Printer Overrides

```

3. In the first processing option field, specify the name of your transfer library.
4. In the next three fields, specify the libraries you created for the source code, objects, and data files you will transfer.

Figure 12–10 Load Transferred Library screen (part 1)

```

98312                Load Transferred Library      Form ID. . . . P924147
Load Transfer Software      Version. . . . ZJDE0001
                             Display Level. 4

This job has various options described below. Enter the desired values and
press ENTER to continue.

Transfer UDCs             1=Yes, 0=No.           0
Transfer AAIIs            1=Yes, 0=No.           0
Transfer Menus            1=Yes, 0=No.           0
Transfer Data Dictionary  1=Yes, 0=No.           1
Transfer Vocabulary/Exits 1=Yes, 0=No.           0
Transfer CASE specs       1=Yes, 0=No.           0
Transfer Helps            1=Yes, 0=No.           0

More...
F5=Printer Overrides

```

Figure 12–11 Load Transferred Library screen (part 2)

```

98312                Load Transferred Library      Form ID. . . . P924147
Load Transfer Software      Version. . . . ZJDE0001
                             Display Level. 4

This job has various options described below. Enter the desired values and
press ENTER to continue.

Transfer SVR              1=Yes, 0=No            0
Transfer DREAMWriter      1=Yes, 0=No            0

Bottom.

F5=Printer Overrides

```

5. In the remaining fields, select the control files you want the system to transfer.

- 6. To begin the transfer, press Enter.

The system merges the control files into the target data library. For non-control files, the system adds the file if it currently does not exist in the target data library. If the file does exist in the target data library, the system does not transfer the file or any data. After the transfer process completes, you must change these files manually based on information in the Print Install Records report (P924143).

Even though you can include next numbers in the transfer library and display information about them in the Print Install Records report, the system will not transfer them automatically. This protects your next number tables. After the transfer process completes, you must change them manually based on information in the report.

To transfer individual control table records

- 1. From the Software Install menu (G9262), choose Copy DD,VO,DW,UDC,SVR,Menus.

Figure 12–12 Copy DD, VO, DW, UDC, SVR, Menus screen

99630 Copy DD,VO,DW,UDC,SVR,Menus

From Library	MYLIBRARY	To Library	MYDATA
Dictionary Item.		Language	Appl Ovr
			Scrn/Rpt
Vocabulary Overrides		Language	Appl Ovr
DREAM Writer Form.		Language	
User Def Codes Sys		Language	
Type.			
Software Versions Rep.			
Menu Identification.			
Generic Rate/Mag Sys			
Type.			

F24=More

- 2. In the From Library, type the name of your transfer library.
- 3. In the To Library, type the name of the target data file library.
- 4. In the appropriate fields, enter information that is specific to the control file record you want to transfer.

Part III

Programming Tools

This part contains these chapters:

- [Chapter 13, "Overview to Programming Tools"](#)
- [Chapter 14, "Work with Data Modeling"](#)
- [Chapter 15, "Work with the Object Cross Reference Repository"](#)
- [Chapter 16, "Work with Data Dictionary"](#)
- [Chapter 17, "Work with Data File Design Aid"](#)
- [Chapter 18, "Work with Screen Design Aid"](#)
- [Chapter 19, "Work with Report Design Aid"](#)

Overview to Programming Tools

This chapter contains these topics:

- [Section 13.1, "About Programming Tools"](#)

13.1 About Programming Tools

Programming tools consist of:

- Data Modeling
- Object Cross Reference Repository
- Data Dictionary
- Data File Design Aid
- Screen Design Aid
- Report Design Aid

Work with Data Modeling

This chapter contains these topics:

- [Section 14.1, "Working with Data Modeling"](#)
- [Section 14.2, "Accessing Data Modeling"](#)

14.1 Working with Data Modeling

The Data Modeling feature provides graphic representation of the relationships of different files. The important aspects of the JD Edwards World Data Modeling feature are:

- It is graphical in its presentation.
- It allows you to narrow the amount of information you view so you can better analyze the file and data relationships.
- It is integrated back to the Data Dictionary and other cross reference tools.

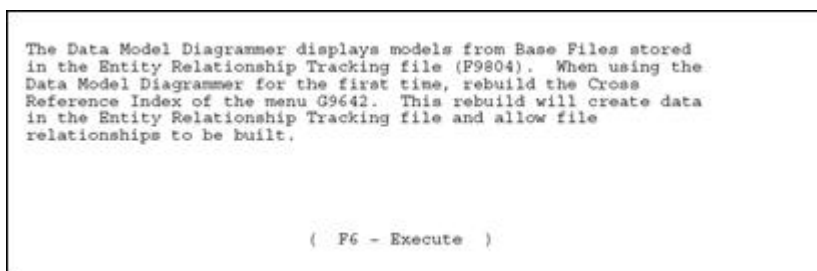
Note: To create a data model, you must run the Data Model rebuild, P9804DM from the DREAM Writer version list.

14.2 Accessing Data Modeling

To access data modeling

1. Use one of the following methods to access Data Modeling.
 - Inquire on the file through Software Versions Repository (SVR) and press F23.
 - Type the menu selection on the command line and press F23.
 - From the Model Relations form (G9241), select Data Modeling.

Figure 14–1 *Data Model Diagrammer Message screen.*



2. Press F6 to continue.

The Data Modeling form displays with the cursor positioned in the field where you enter a file name.

Figure 14–2 Data Modeling screen (part 1)

```

98042                               Data Modeling                Max Levels . 08
Base File                           Function Use 230
                                     Display Dupl 1
                                     In Sys 0002 0104

Opt: 1=Move Top 5=Display 7=Where Used 8=Fields F11=Install/Reporting

```

3. To view the Data Model, enter a file name and press Enter.

Field	Explanation
Max Levels	Determines what level of detail you want to view in terms of file relationships. Level 1 represents the highest level and level 10 represents the lowest level. The default value is level 08. Level 01 shows only those files that are directly related to the data model file.
Function Use	Displays the files that either match or have a function use less than the function use you specify.
Display Duplicate Relationships	Determines whether you want to display duplicate relationships or not. The valid values are: 1 – No duplicates (default value) 2 – First logical only 3 – All files
In Sys	Limits your model to only those files from the specified install or reporting system codes. To toggle to reporting system codes, you press F11, Install/Reporting.

4. To narrow the amount of file information displayed, specify values in the four fields appearing in the upper right of the form.

Figure 14–3 Data Modeling screen (part 2)

```

98042                                Data Modeling                                Max Levels . 08
Base File                            Function Use 230
F0006 Business Unit Master           Display Dupl 1
                                      In Sys  00 02 03 04

- <M:1> F0010 F0010 Company Constants
-   |
-   | <1:M> F0901 F0901LE Account Master
-   |   |
-   |   | -M:M> F4801 F4801LB Work Order Master File
-   |   | -M:1> F0902 F0902LA Account Balances
-   |   |   |
-   |   |   | -M:M> F0311 F0311LG Accounts Receivable Ledger
-   |   |   | -M:M> F0411 F0411LK Accounts Payable Ledger
-   |   |   | -M:M> F0911 F0911LD Account Ledger

Opt: 1=Move Top 5=Display 7=Where Used 8=Fields F11=Install/Reporting

```

14.2.1 Detailed Explanation of a Line

The following figure shows a portion of the Data Modeling form.

Figure 14–4 A Portion of the Data Modeling screen

```

Base File
F0006 Business Unit Master
|<M:1> F0010 F0010 Company Constants

```

Below is an explanation of the components displayed on the form.

- Business Unit Master is the primary file (F0006)
- Company Constants is the secondary file (F0010)
- <m:1> - There is a many to one, bi-directional relation between the files

Field	Explanation
Quantifier	<p>The quantifier notation indicates the following:</p> <p>M:1 – many to one</p> <p>1:M – one to many</p> <p>M:M – many to many</p> <p>M:N – many to zero or many</p> <p>N:M – zero or many to many</p> <p>1:N – one to zero or many</p> <p>1:1 – one to one</p>
Direction	<p>The three direction notations are as follows:</p> <p>-> – refers to</p> <p><- – referred to</p> <p><-> – way relation</p>
Type	Used to distinguish between prototype and permanent files.
Subfile portion of screen	Displays the key fields that relate these two files together.

14.2.2 Function Key Exits from Data Modeling

Function Key	Description
F11	Install/Reporting Allows you to toggle between displaying install or reporting system codes.
F16	Rebuild A File Relationship Exits to a DREAM Writer versions list. The rebuild is fundamentally based upon the program finding a connection between data items. For example, if you create new data items in the Data Dictionary and use those data items when creating a new file, you do not get a graphic representation for that file because the data items do not exist in any other file. To create and present file relationships, there must be at least one data item in the primary file that also resides in some other file as well. Print the Data Model
F21	Print the Data Model Prints the current data model

14.2.3 Selection Exits from Data Modeling

Option	Description
1	Move Top To select a file in the current data model and move it to the top to view its data model.
5	Display To view the file relationships. The Define a File Relationship form displays the relationship detail for the two files.
7	Where Used Exits to the Object Cross Reference Repository and displays all the programs that access the particular file.
8	Fields To access the File Field Description form for any file displayed in the Data Model. The File Field Description form presents all the fields in a file, the field type, their size and their position in the file.

Example Selection 7 - Where Used

Figure 14-5 Cross Reference screen

```

980014                                Cross Reference
Object: Name . . . F0006      Business Unit Master
Type . . . E      All programs using file
To Display E
Funct Cd . . .

O  Name      Description      Field Attr T Start Upd
E  Len  Dec  Y  Loc  Y/N
- PJON      Jon Nugent Test      N
- P0006      Business Unit Master Revisions - Single      Y
- P0006A     Business Unit Structure Revisions      Y
- P0006ISS   File Conversion - Plug the default value      Y
- P0006P     Business Unit Master Print      N
- P0006QD    Update Bill Code If Business Unit Type = C      N
- P0006L     Job Master Revisions      Y
- P00062     Property/Building Revisions      Y
- P00071     Work Day Calendar      N
- P0012      Automatic Accounting Instructions Revisi      N
- P0013QD    Convert Amounts to Domestic Decimal      N
- P0018      Tax File Revisions      N
- P0018P3    Tax Detail Report by Tax Authority      N

Opt: 1=SVR  2=Create Object  3=Field Explanation  F21=Print  F16=Regenerate

```

Example Selection 8 - Fields

Figure 14-6 Data Modeling screen

```

98042                                Data Modeling      Max Levels . 08
Base File      Company Constants      Function Use 230
P0010          In Sys 00 02 03 04
Display Dupl 1

& <1:M> P0006  P0006LB  Business Unit Master
-
- -M:1> P0901  P0901LB  Account Master
-
- -M:M> F4801  F4801LB  Work Order Master File
- -M:1> 98FFD-----File-Field-Descriptions-----S/FMT
File and Libr: F0006 TEST PF
- I0006 - Business Unit Master File
- MCMCU K01 Business Unit. . . . A 12 1
- MCDL01 Description. . . . A 30 13
- MCDC Description - Compre A 25 43
- MCLDM Level of Detail. . . . A 1 68
- MCAN8 Address Number . . . S 8 0 69
- MCCO Company. . . . . A 3 77
- MCSTYL Type Business Unit . A 2 80
- MCRP01 Division x . . . . A 3 82
- MCRP02 Region . . . . . A 3 85
Opt: -2=Dictionary--4=Sel--F15=Resequence--F3=Return
Opt: 1=Move Top 5=Display 7=Where Used 8=Fields F11=Install/Reporting

```

Work with the Object Cross Reference Repository

This chapter contains these topics:

- [Section 15.1, "Working with the Object Cross Reference Repository"](#)

15.1 Working with the Object Cross Reference Repository

The Object Cross Reference Repository locates all the objects associated with a particular member or object. The cross reference files are shipped empty. You must first run the Cross-Ref Index rebuild on menu G9642. If you add a new member to the Software Versions Repository, the Rebuild Cross Reference job must be run to ensure the new member is included in the display. You must have source code on your machine to run this rebuild.

15.1.1 Accessing the Object Cross Reference Repository

To access the Object Cross Reference Repository

Select one of the following methods:

- From the Master Directory (G), choose Hidden Selection 27. From Advanced and Technical Operations (G9), choose Documentation Services. From Documentation Services (G91), choose Object Cross Reference Repository.
- From Software Version Repository, press F15 to access the Object Cross Reference Repository.
- The Fast Path 'XREF' may also have been set up.

15.1.2 Example

The following form displays all programs using the file F0006.

The first four fields on this form relate to the object being cross referenced. The remainder of the form lists the members found during the cross reference search.

Figure 15–1 Object Cross Ref. Repository screen

980014 Object Cross Ref. Repository

Object: Name . . . P0006 Business Unit Master

Type . . . E All programs using file

To Display E

Funct Cd .

O	Name	Description	Field	Attr	T	Start	Upd
E			Len	Dec	Y	Loc	Y/N
-	P000661	Business Unit Master Conversion					Y
-	P06238	Report - Payroll Check Register					N
-	P06371	Report - Certified Payroll Register					N
-	P06611I	Tip Credit Generation with Interim Check					N
-	P06638	Sales Allocation Report					N
-	P126410	STAR - Columnar Spreadsheet					N
-	P200	Submit Network Job					N
-	P23250	Texas 250 Report					N
-	P26011	Gas Balancing - Entitlement Extract					N
-	P26112	Gas Balancing - Entitlement Explosion to					N
-	P26115	Gas Balancing Statement by Sales Point					N
-	P26116	Gas Balancing Statement by Owner					N
-	P26119	Gas Balancing Master Subfile Display					N

Opt: 1=SVR 2=Create Object 3=Field Expl F21=Print F16=Regenerate

15.1.3 Conducting an Object Cross Reference Repository Search

All members of the Software Versions Repository are cross referenced, and you can search for these relationships in different ways.

To conduct an Object Cross Reference Repository search

- 1. From the Documentation Services menu (G91), choose Object Cross Ref. Repository.

The following form displays the statistics for program P0006.

Figure 15–2 Object Cross Ref. Repository screen

980014 Object Cross Ref. Repository

Object: Name . . . P0006 Business Unit Master Revisions - Single

Type . . . E Statistics for program

To Display #

Funct Cd .

O	Name	Description	Field	Attr	T	Start	Upd
E			Len	Dec	Y	Loc	Y/N
-		Total Statements in RPG II					
-	1,259	Total Statements as Comments					
-	1,313	Total Statements in RPG III					
-	3,993	Total Statements in Program					

- 2. To conduct an object cross reference repository search, enter an object Name, Type code and To Display code. To narrow the search, enter a Funct Cd.

Note: If you are unfamiliar with the Cross Reference Relationships codes, type an asterisk (*) in the Type field, as shown below.

The Cross Reference Relationships codes appear in a new form.

Figure 15-3 Cross Reference Relationships Codes screen

```

Object: Name . . . F0006 Business Unit Master
Type . . . *
To Display -
Punct Cd . -

O Name Description Field Attr T Start Upd
P Len Dec Y Loc Y/N

```

3. Press Enter.

Figure 15-4 User Defined Codes Window

```

81QM User Defined Codes Window
98 XR Cross-Reference Relationships
Skip To Code . . .
-/D All data fields in /COPY
-/F All files in /COPY
-/I Program invocations from /COPY
-/P Programs containing /COPY
-CP All Programs using command
-DF All files using data field
-DP All programs using data field
-EP Error messages in a program
-F/ All /COPY members using file
i FD All data fields in file
Opt: 4=Select F9=Glossary F14=Memo

```

4. Enter a 4 to select the desired code. The Object Cross Ref. Repository form displays with the selected codes. The F/D combination shown is very valuable to document the fields in a file.

Figure 15-5 Object Cross Reference Repository screen

```

980014 Object Cross Ref. Repository
Object: Name . . . F0006 Business Unit Master
Type . . . F All data fields in file
To Display D
Punct Cd . -

O Name Description Field Attr T Start Upd
P Len Dec Y Loc Y/N
- MCMCU Business Unit. . . . . 12 A 1
- MCSTYL Type Business Unit . . . . . 2 A 13
- MCDC Description - Compressed . . . . . 40 A 15
- MCLDM Level of Detail. . . . . 1 A 55
- MCCC Company. . . . . 5 A 56
- MCAN8 Address Number . . . . . 8 0 S 61
- MCAN80 Owner/Receivable Address . . . . . 8 0 S 69
- MCCNTY County. . . . . 3 A 77
- MCADD5 State. . . . . 3 A 80
- MCDL01 Description. . . . . 30 A 83
- MCDL02 Description 02 . . . . . 30 A 113
- MCDL03 Description 03 . . . . . 30 A 143
- MCDL04 Description 04 . . . . . 30 A 173

Opt: 1=SVR 2=Create Object 3=Field Expl F21=Print F16=Regenerate

```

Work with Data Dictionary

This chapter contains these topics:

- [Section 16.1, "About the Data Dictionary Repository"](#)
- [Section 16.2, "Understanding the Data Dictionary Structure"](#)
- [Section 16.3, "Locating A Data Item Name"](#)
- [Section 16.4, "Working with the Data Dictionary"](#)
- [Section 16.5, "Working with Data Item Alias Revisions"](#)
- [Section 16.6, "Working with the Data Dictionary Glossary"](#)
- [Section 16.7, "Working with User Defined Help Instructions"](#)
- [Section 16.8, "Working with Data Field Descriptions"](#)
- [Section 16.9, "Working with the Next Numbers Facility"](#)
- [Section 16.10, "About the Field Reference File"](#)
- [Section 16.11, "About the JD Edwards World Message File"](#)
- [Section 16.12, "Locating the Rebuild FRF and JD Edwards World Msg File Form"](#)

16.1 About the Data Dictionary Repository

The Data Dictionary is the most powerful element in the JD Edwards World software offerings. We define all data items used by JD Edwards World files and programs in the Data Dictionary. By requiring this up-front definition, the Data Dictionary enforces uniformity, consistency, and accuracy across all JD Edwards World applications.

The Data Dictionary represents a centralized repository of all:

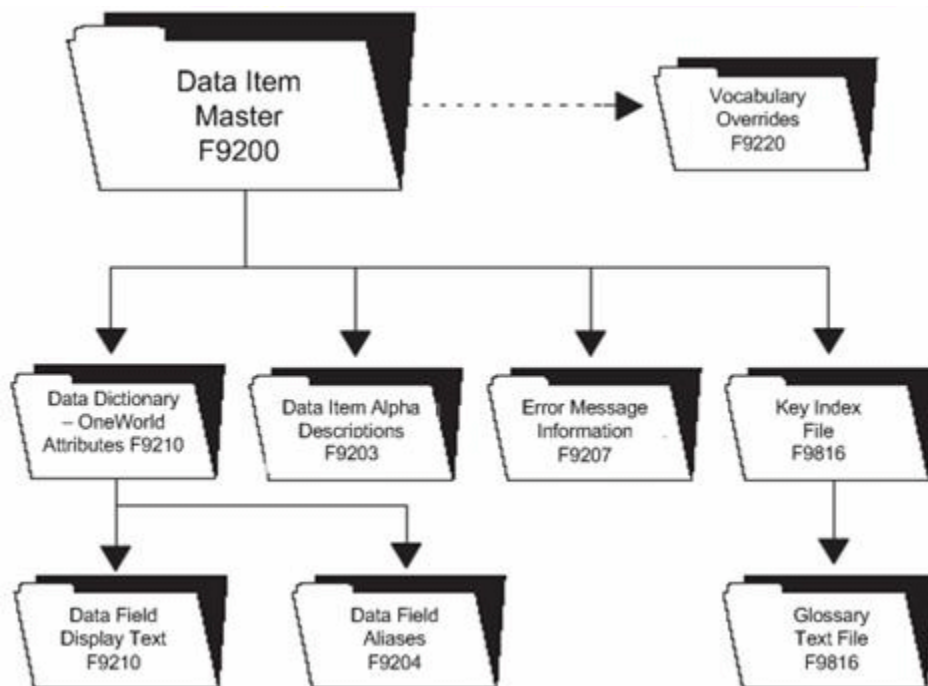
- Field definitions
- Program error messages, both interactive and batch
- Menu messages
- Work fields
- User defined help instructions,
- Program and field descriptions accessed by the Help facility

16.2 Understanding the Data Dictionary Structure

The following files comprise the Data Dictionary Repository.

The following diagram illustrates the relationships between these files.

Figure 16–1 Data Dictionary Repository Files



Data Item Master (F9200)

This is the master file for the Data Dictionary. Every data item has a record in this file.

Data Dictionary - OneWorld Attributes (F9210)

This file contains the base display and validation rules for all file and data items. It is also used in Enterprise 1 environments.

It also contains database fields (glossary group of D or S), categories (glossary group C), and work fields (glossary group U). In addition, the C alias for each data item is stored in this file.

Data Field Display Text (F9202)

This file lets you define multiple row descriptions and column titles for each data item, based upon language or reporting system (application override). You can add a language value for each language translation required for the row description and column title. The reporting system code allows the entry of jargon or company terminology that overrides the generic text supplied with the application.

Data Item Alpha Descriptions (F9203)

This file contains the alpha and compressed descriptions for all data items. This allows you to perform a Data Dictionary search by description. You can also specify separate alpha descriptions by language preference and reporting system. Every data item has a record in this file.

Data Item Aliases (F9204)

This file contains database fields (glossary group of D or S). It also contains COBOL aliases for each data item.

Error Message Information (F9207)

This file contains error messages that have a program, form, or report ID attached to them. You exit to this program, form, or report when you receive the error. For example, if you receive a user defined code error, you could exit to the User Defined Code Revisions program to modify a value.

Glossary Text File (F9816)

This file contains the glossary text for every data item. Each line of text in the glossary is one record.

Key Index File (F98163)

This file contains key information to link the data items to their glossary and to specific items.

16.3 Locating A Data Item Name

The system uses data items to define the parameters of a field or message. For example, AT1 defines the field Search Type. The system maintains each data item used in a file or retrieved for a form or report based on a data item name, such as AT1. To work with the Data Dictionary functions you need to know this name.

To locate a data item name

The JD Edwards World field-level help displays data item names.

Position the cursor on any field and press F1. For example, position the cursor in the Search Type field on the Address Book Revisions form (option 3 from menu G01) and press F1. The User Defined Codes form displays for the Search Type field. In the upper right corner of this form is the data item name for the Search Type field, which is AT1.

Figure 16–2 Address Book Revisions screen

The screenshot displays the 'Address Book Revisions' screen. At the top, it shows '01051 Address Book Revisions' and fields for 'Long Addr No.' and 'Resp. Bus. Unit'. Below these are 'Action Code' and 'Address Number'. The 'Alpha Name' field is empty. A 'User Defined Codes Window' is open, showing a list of codes: '01 ST Search Type' (with 'AT1' in a box next to it), 'Skip To Code', and a list of categories: 'A Applicants', 'C Customers', 'E Employees', 'F Facilities', 'I Investors', 'J Jobs', 'M Mail Distribution List', 'O Company', 'P Prospects', and 'Q Participants'. At the bottom of the window, it says 'Opt: 4=Select F9=Glossary F14=Memo'. To the right of the window, there are fields for 'Search Type', 'Payables Y/N/M', 'Receivable Y/N', 'Employee Y/N', 'User Code', and 'Subidgr Inact'. At the bottom right of the screen, it says '13=Add'l Info F24=More'.

The data item name is often in the upper right corner of the help screen or the User Defined Codes screen. It can also be seen by using F9 for the Glossary on other Help screens.

16.4 Working with the Data Dictionary

The Data Dictionary provides many useful features. You can create data item aliases for other programming languages, work with the glossary, add or change user defined help instructions, and locate data field descriptions.

To work with the Data Dictionary

From menu G92, choose Data Dictionary. The Data Dictionary form is displayed.

Figure 16–3 Data Dictionary screen

```

9201                                Data Dictionary                                Rls Last Chg _____
Action Code. . . . .                Data Item. . . . .                Item Parent. _____
Glossary Group . . . . .
-----
Alpha Desc . . . . .                General Information                -----
Reporting System . . . . .
System Code. . . . .                Type . . Size . . . . .        Data File Decimals ____
Data Item Class. . . . .            Item Occurrences . . . . .    Display Decimals . . ____
-----
Row Description. . . . .            Descriptions                    -----
Column Title . . . . .
-----
Default Value. . . . .            Default and Display/Edit Rules  -----
Data Display Rules . . . . .
Data Edit Rules. . . . .
Search Program . . . . .
Next Nbr System. . . . .        Next Number Index . . . . .
F4=Search  F8=UDC  F9=Prev  F10=Glossary  F11=Descriptions  F15=Where Used

```

You find the Data Dictionary selection on several JD Edwards World menus and repository services.

You can also display the Data Dictionary form by entering the mnemonic DD in the Selection line of any JD Edwards World menu.

Use the following fields where applicable:

Field	Explanation
Rls Last Chg	The software version number to be defaulted in the Software Versions Repository file.
Item Parent	Display only. A data item which becomes the template from which other data items are created. For example, AC (Category Codes) is the parent to AC01.
Data Item	<p>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 file prefix, the RPG data name does not exceed 6 bytes.</p> <p>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). Special characters are not allowed as part of the data item name, with the exception of #, @, \$.</p> <p>You can create protected data names by using \$xxx and @xxx, where you define xxx.</p> <p>Messages can contain up to 10 characters. Types of messages are further defined by glossary group.</p> <p><i>Form-specific information</i></p> <p>Messages can contain up to 10 characters. Types of messages are further defined by glossary group.</p>
Glossary Group	<p>Differentiates data items into types. These types include primary and secondary types, error messages, and help text. See UDC 98/GG for a complete listing of Glossary Groups.</p> <p>See also Section 16.6.1, "What are the Data Dictionary Glossary Groups?" within this chapter.</p>

Field	Explanation
Alpha Desc	<p>Database text string that names the data item. Enter text in upper and lower case. The system uses this field to search for similar data items (F4). To enter an alpha description, follow these conventions:</p> <p>Dates - Begin all Date fields with Date</p> <p>Amounts - Begin all Amount fields with Amount</p> <p>Units - Begin all Unit, Quantity, and Volume fields with Units</p> <p>Name - Begin all 30-byte description fields with Name</p> <p>Prompt - Begin any Y/N prompting field with Prompt</p> <p>Address Number - Begin all address numbers (employee, customer, owner) with Address Number</p>
Reporting System Code	Designates the system number for reporting purposes. This rarely differs from the Install System. Exceptions occur for data items used by more than one system.
Product Code	The application system code where the item is used.
Type	<p>The RPG data type. Refer to UDC 98/DT.</p> <p><i>Form-specific information</i></p> <p>Note: When using the 'O' type, create the field as large as possible. This allows the use of ideographic (Double byte) languages such as Japanese.</p>
Size	<ul style="list-style-type: none"> ■ The length of the data item.
Data File Decimals	The number of positions to the right of the decimal of the data item. This is usually zero. See Section 37.2, "Displaying Field Descriptions" .
Data Item Class	Defines the essential attributes and characteristics of a data item. There will be a data item for each of the Data Item Class entries. Data items are grouped into these Classes and the Data Item attributes are the same as the Class. F1 on this field will show all the defined Classes.
Item Occurrences	<p>In setting up a data item in the data dictionary, you may specify a number of array elements. This will cause the automatic creation of one additional data item for each array element.</p> <p>The array data item names are restricted to certain lengths depending on the number of array elements:</p> <p>3 bytes - 1 to 9 elements</p> <p>2 bytes - 10 to 99 elements</p> <p>1 byte - 100 to 999 elements</p>
Display Decimals	Use this parameter to designate the number of decimals in the currency, amount, or quantity fields the system displays. For example, U.S. Dollars would be 2 decimals, Japanese Yen would be no decimals, and Cameroon Francs would be 3 decimals. Data Item Class groups will have the same display decimals as the Class definition. Most decimal data fields are stored in the data files as whole numbers and the Display Decimals value is used to display or print the data correctly.

Field	Explanation
Row Description	<p>Stores the title on text and reports. It is used in a manner similar to the column description in the query facility. It should be less than 35 characters. Use abbreviations whenever possible. For example:</p> <p>U/M – Units of measure</p> <p>YTD – Year-to-date</p> <p>MTD – Month-to-date</p> <p>PYE – Prior year end</p> <p>QTY – Quantity</p> <p>G/L – General ledger</p> <p>A/P – Accounts payable</p> <p>DEPR – Depreciation</p>
Column Title	<p>The first line of description that will be used in column headings on a report or screen. This description should be no larger than the data item size, if possible. If the column heading is only one line, it should be placed in this column. Use the second line of the Column Title when two are needed.</p>
Default Value	<p>Used as the default value on the data entry screen for the associated data item. This value will be entered into the field upon exit from the screen if no other value is entered. The value entered must be the exact same length as the data item size. Place single quotes around the value if it contains any embedded blanks. The keywords *BLANKS and *ZEROS can be used as the default value. When entering a numeric data item with default values, the redisplay of the data item suppresses all leading zeros.</p> <p>Caution: If a blank entry is allowed, default values should not be used.</p>
Data Display Rules	<p>Keywords which describe an editing technique applied when data is displayed. Validation is applied to the data after Enter is pressed. The rules will be incorporated into the source code at program generation time. This is usually numeric editing or masking.</p> <p>The developer can override these rules at the time of program creation.</p> <p>The current list of these rules is kept in the User Defined Codes at SYSTEM = 98 and RECORD TYPE = DR.</p>
Data Edit Rules	<p>Keywords which control allowed values when data is entered. Validation is applied to the data after Enter is pressed. These controls will be incorporated into the program at generation time. The data may be required to be in a range, in a UDC table, or in a file.</p> <p>The developer can override these rules at the time of program creation.</p> <p>The current list of these rules is kept in the User Defined Codes at SYSTEM = 98 and RECORD TYPE = ER.</p>

Field	Explanation
Search Program	<p>The Help Text Program is used to call a program when the function key - F1 is pressed on its Data Item. When F1 is pressed, the program entered in this field will be executed. There are some fields where the Help Program is hard coded in the Help system such as AN8 in the Name Search program (P01200). If this field is left blank, the glossary will be used. If you wish the User Defined Code window to appear when F1 is pressed, enter '*UDC' in this field (this is the default when 'UDC' is entered in the Data Edit Rules field). If you do not want the UDC window to appear and you have 'UDC' in the Data Edit Rules field, change this field to be blank.</p> <p>Program Requirements: For your text program to work correctly, you must allow it to accept three standard parameters:</p> <ul style="list-style-type: none"> ■ PARM 1 - Field Name, size 10, type alpha ■ PARM 2 - Return Value, size 30, type alpha ■ PARM 3 - Return Description, size 30, type alpha
Next Nbr System	Designates the system number for the Next Number retrieval. See User Defined Codes, system code '98', record type 'SY'.
Next Number Index	The array element number retrieved in the Next Number Revisions program. There are ten NN array elements for each System Code. For example, the next Address Book number (AN8) is array element '01' of system '01'.

16.4.1 What You Should Know About

Topic	Description
Data Dictionary Security	<p>Once a system is operational, you must be particularly careful to secure the integrity of the Data Dictionary. Two facilities are provided to aid you with the security:</p> <ul style="list-style-type: none"> ■ Operational systems coding - System numbers and names are defined in User Defined Codes, system code 98, record type SY. If you place an X in the second line of description for a particular system, it will be designated as operational. Once a system has been set up as operational, all data fields coded to this system are protected from modifications. This control, however, can be violated by removing the X in User Defined Codes. ■ Action Code Security - A more prudent form of control is to assign add/change/delete authority to only one individual, the database administrator. If you choose to use this control, you should restrict access to the Data Dictionary program (P9201) in Action Code Security. See Working with Action Code Security. All users should be set up with Inquiry authority only. The database administrator would be set up with add/change/delete authority.

16.4.2 The Function Keys for the Data Dictionary

The following function keys are available from the Data Dictionary form.

Function Key	Description
F4	A data item search facility. Enter the search text in the Alpha Name field on the Data Item Search screen. If you are a double-byte user, you must provide a search description for each data item you create or change in order for the search facility to function properly.
F6	Repository Services
F8	User Defined Code Tables
F9	Automatic Reinquiry
F10	Glossary
F15	A data item cross reference

16.5 Working with Data Item Alias Revisions

Use the Data Item Alias form to assign alias names to a data item that other programming languages use. When adding a data item of glossary group "D" or "S", you must enter an alias for that field. This form automatically displays on an Add function when the alias is not unique. The alias defaults from the alpha description.

To work with data item alias revisions

On Data Dictionary screen

1. Press F5. The Data Field Alias form displays.

Figure 16–4 Data Field Alias screen

2. Enter an alias type and name.

An alias name must be unique to the system or the system does not let you exit from the Data Field Alias form.

Current alias types required:

- 1 = PL1 or COBOL
- 2 = C language

An alias must adhere to JD Edwards World' syntax rules of the "C" language.

16.6 Working with the Data Dictionary Glossary

16.6.1 What are the Data Dictionary Glossary Groups?

The Data Dictionary consists of several glossary groupings that define the data item in the JD Edwards World software. All glossary groups typically have associated text. The glossary stores this text. The major glossary groups follow:

Group	Explanation
E	<p>JD Edwards World Interactive error messages</p> <ul style="list-style-type: none"> JD Edwards World defines interactive error messages with numbers less than 5000 and with numbers from 000A to 999Z. For example, 0001 Client defines interactive error messages with numbers from 5001 to 9999
M	<p>Menu Messages</p> <ul style="list-style-type: none"> JD Edwards World defines menu message data items as MENUMSGxxx, where xxx represents a number. For example, MENUMSG044 Client defines menu message data items as MENUCLTxxx, where xxx represents a number
J	<p>JD Edwards World Batch error messages</p> <ul style="list-style-type: none"> JD Edwards World defines batch error messages with JDExxxx, where xxxx represents a number less than 7000. For example, JDE0001 Client defines batch error messages with JDExxxx, where xxxx represents a number greater than 7000 and less than 9000 The QJDEMSG message file contains batch error messages The JD Edwards World program found on Rebuilds and Global Updates (G9642) builds the batch error messages file QJDEMSG.
C	<p>Data Field Function Categories (Data Item Class)</p> <ul style="list-style-type: none"> Groups common data elements For example, CURRENCY, QTYINV.
D or S	<p>Primary or Secondary Data Items</p> <ul style="list-style-type: none"> Used for validations Text on Videos Text on Reports Field Reference Files - F98FRFA-Z \$ and @ For example, AC for a D data item; AC01 for an S data item
F	Files
G	General Narrative. Used to add information about a specific data item

Group	Explanation
H	User Defined program Helps <ul style="list-style-type: none"> Client use only for adding custom helps for JD Edwards World programs For example, U00MENU, U01051. When HELP is keyed on command line, 'F5' on the help window indicates that there are customer helps available. Use F5 to view.
L	Report Messages. Messages or warnings for certain procedures, or letters written and produced through DREAM Writer
N	Program Notes <ul style="list-style-type: none"> Used by programmers to type notes about a program in the system Add the notes to the glossary in the Data Dictionary Create notes for a program, add a data item with an "N" as a prefix in front of the program name, for example N00HELP.
P	Program Purposes <ul style="list-style-type: none"> Used in the general summary help instructions Used for the Program Generator Product For example, P01051
R	Report Data Elements - the majority of these data items are letters produced through DREAM Writer.
T	Terms <ul style="list-style-type: none"> These data items are definitions of commonly used terms The prefix of the data item name is "TERM." For example, the AAI definition is in the glossary under the data item TERMAAI.
U	For work fields that a program utilizes <ul style="list-style-type: none"> Begin with # For example, #AA

To work with the glossary

- From the Data Dictionary screen, press F10. The Data Item Glossary Revisions screen displays.

If your glossary group is E, H, J, or M, this screen automatically displays when you press Enter on the main Data Dictionary form.

Figure 16-5 Data Item Glossary Revisions screen

```

92001                      Data Item Glossary Revisions  Language . . . . .
Action Code. . . . . I      Applic Override
Data Item. . . . . AT1      Scrn/Rpt . . . . .
System Code. . . . . 01      Desc Search Type
Glossary Group . . . . D      Reporting System Code. 01
                               Search Desc

A user defined code (system 01, type ST) that identifies the kind of Address
Book record you want the system to select when you do name or message
searches. Examples:
      E - Employees
      X - Ex-Employees
      V - Vendors
      C - Customers
      P - Prospects
      M - Mail Distribution Lists

F4=Search  F9=Redisplay Prev  F19/F20=Prev/Next Item  F24=More

```

2. Do the following that applies:

- Use the Language, Applic Override, and Scrn/Rpt fields for jargon. See About Language and Jargon in the *JD Edwards World Technical Foundation Guide* for details.
- Use cursor keys to see additional text lines.
- When entering an "E" glossary group item, which is an interactive error message, use F5 to define a program, form, or report to reference when the system displays the error message.
- On double-byte machines, this form displays the Search Desc field. To ensure the data item search facility functions properly, you must enter a search description for each data item you create or change. You can enter it on this form or on the Data Dictionary form.

Note: Always leave the last two character positions of each text line blank.

Field	Explanation
Data Item	<p>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 file prefix, the RPG data name does not exceed 6 bytes.</p> <p>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). Special characters are not allowed as part of the data item name, with the exception of #, @, \$.</p> <p>You can create protected data names by using \$xxx and @xxx, where you define xxx.</p> <p>Messages can contain up to 10 characters. Types of messages are further defined by glossary group.</p> <p><i>Form-specific information</i></p> <p>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 displays on a successful add. You should assign interactive error message numbers greater than 5000.</p>

Field	Explanation
Glossary Group	<p>Differentiates data items into types. These types include primary and secondary types, error messages, and help text. See UDC 98/GG for a complete listing of Glossary Groups.</p> <p><i>Form-specific information</i></p> <p>Note: If you need to assign your own error message numbers, use 4 digit numbers greater than '5000'.</p> <p>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.</p> <p>To create your own messages for the IBM message file (glossary group J), begin the data item name with your own three characters, for example CLT0001.</p>

16.7 Working with User Defined Help Instructions

The easiest way to modify help instructions is to utilize the User Defined Instructions in Data Dictionary.

To work with user defined help instructions

On the Data Item Glossary Revisions screen

Figure 16–6 Data Item Glossary Revisions screen

```

92001          Data Item Glossary Revisions  Language . . . . .
                                           Applic Override
                                           Scrn/Rpt .
Action Code. . . . . I
Data Item. . . . . U00MENU  Desc Help - User Defined Instructions
Install System Code. 00    Reporting System Code. 00
Glossary Group . . . H

This is a sample of user defined instructions that may be entered by users for
any given program in the system.  If you wish to provided -high lighted-, or
underlined, or both high lighted and underlined, text refer to the special
attributes section of help instructions.  All user defined instructions may be
entered directly into the data dictionary.

P4-Search  F9-Redisplay Prev  F19/P20-Prev/Next Item  P24-More

```

JD Edwards World provides an example record (U00MENU) in your system.

1. Enter a program name in the Data Item field, replacing the "P" with "U". For example, for program P01051, create a data item U01051.
2. Enter H in the Glossary Group field. The H Glossary Group defines user defined help. JD Edwards World does not replace H Glossary Group data items during an upgrade.
3. Perform an add or change.

On the Help Task List form, "F5=User Inst" is displayed if you wrote your own User Defined Help instructions.

16.8 Working with Data Field Descriptions

To work with data field descriptions

1. From the Data Dictionary screen, press F11.

Figure 16–7 Data Field Descriptions screen

```

9202                                Data Field Descriptions
Action Code. . . . . I
Data Item. . . . . AN8 Address Number
Row Description. . . . Address Number
Column Title . . . . Address
                  Number
                  -----
O Lan Appl
P Over Description Column
-- 44 Row Vendor Number Vendor
-- 48 Row Customer Number Address
-- Row -----
-- Row -----
Opt: 5=Glossary F9=Redisplay Prev F19/20=Prev/Next Item F24=More

```

2. On the Data Field Descriptions screen, enter specific jargon or language descriptions for each data item. See About Language and Jargon in *JD Edwards World Technical Foundation Guide* for details.

16.9 Working with the Next Numbers Facility

The Next Number facility controls the automatic numbering for such items as new G/L account numbers, voucher numbers, address numbers. It allows you to specify what numbering system you want to use and gives you a method of incrementing numbers to reduce transpositions and keying errors.

Complete the following tasks:

- Locate the Next Numbers facility
- Work with Next Numbers by company and fiscal year

To locate the Next Numbers facility

From menu G00, choose Next Numbers.

Figure 16–8 Next Numbers screen

0002		Next Numbers	
Action Code I		
System Code 09	General Accounting	
Use	Next Number	Check Digit	
Next Account ID	21831	-	
Journal Entries	1946	-	
Consol Accounts	90000214	-	
_____	_____	-	
_____	_____	-	
_____	_____	-	
_____	_____	-	
_____	_____	-	
_____	_____	-	
_____	_____	-	
CAUTION:			
Changing the data on this screen may make it impossible to retrieve previously added addresses and may result in attempts to assign duplicate numbers.			
F8-Next Numbers by Co/FY		F24-More Keys	

16.9.1 What You Should Know About

Topic	Description
Next Numbers	<p>The next numbers file is F0002</p> <ul style="list-style-type: none"> 10 element array 1 record per system Modulus 11 check digit optional <p>Once set, do not change</p> <ul style="list-style-type: none"> Has an impact on system performance Will not duplicate numbers. When it reaches max, starts over Cannot change position of user or add new entry without programming modifications <p>Ties with the Data Dictionary</p> <ul style="list-style-type: none"> Data Item in Data Dictionary points to the Next Number System. For example, Data Item AID has System Code 09/01.

To work with Next Numbers by company and fiscal year

Use Next Number by Company for these original documents:

- Journal Entries
 - Accounts Payable Vouchers
 - Accounts Receivable Invoices
 - Sales Orders
 - Purchase Orders
- From Next Numbers, press F8.

[illegible]

- ## 16.10 About the Field Reference File

When building the Field Reference File, JD Edwards World groups the data items. Items that begin with "A" are translated into the IBM-readable format and accessed through file F98FRFA. Data items that begin with "B" are accessed through F98FRFB. Each letter of the alphabet has a corresponding F98FRF file. Client data items are stored in F98FRF\$ and F98FRF@. You can rebuild one file at a time. You can also build the message file in alternative languages. Due to the IBM limitation on the number of fields allowed in a file, it may be necessary to have more than one "FRF" file. The field information from the World Data Dictionary is stored in are physical files (F98FRFA1, F98FRFA2, and so on). F98FRFA is a logical which joins the physical files.

16.10.1 What Happens with the Rebuild?

- Rebuilds F98FRFA-Z, \$, and @ using Data Dictionary data item glossary groups D and S
- Rebuilds the message file (QJDEMSG) in QGPL
- Uses a processing option located on Form ID J98DDMSGF, to determine which library to build the QJDEMSG file. The default is QGPL
- Does not rebuild the JD Edwards World message file if entering a single field reference file to be built
- Builds a separate message file for each language installed. Enter '**' for all languages installed on the system.

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16.11 About the JD Edwards World Message File

The JD Edwards World Message (QJDEMSG) file contains all the messages that are coded Glossary Group J. The programs access the messages from this file. If a client adds messages with Glossary Group J, a rebuild is necessary to correctly add the new messages to the JD Edwards World Message (QJDEMSG) file.

16.11.1 Rebuilding only the JD Edwards World Message File?

The system does the following:

- Rebuilds the message file (QJDEMSG) in QGPL. Uses a processing option, Form ID J98DDMSGF, to determine which library to build the QJDEMSG file. The default is QGPL
- Picks up Data Dictionary data item glossary group J

Enter a value from UDC table 01/LP to generate a message file for a single language. Only those translated error messages which can be seen on the Glossary screen with a language code will be included. Enter '**' for all languages installed on the system.

16.12 Locating the Rebuild FRF and JD Edwards World Msg File Form

To locate the Rebuild FRF and JD Edwards World Msg File form

From menu G9642, choose FRF & JD Edwards World Msg File. The first and third fields are self-explanatory. The source referred to on the second parameter is not useful so enter QTEMP in that field.

Figure 16-10 Rebuild FRF and JDE Msg File screen

```

98FRF                                Rebuild FRF & JDE Msg File

The Field Reference Files are facsimiles of the J. D. Edwards Data Dictionary
and are vital for the creation of all data base files. The version of the Data
Dictionary upon which they are based determines the type and characteristics
of all application data elements. This procedure will recreate these files
based upon the Data Dictionary files found in the library specified, placing
the DDS source in the JDESRC source file the Source Library selected, with
the Field Reference Files being created in the Data Library selected.

      Base Field Ref Files on Data Dictionary in Library _____
      Create Field Ref source in Source Library   _____
      Create Field Ref Files in Data Library      _____
      Single field ref($, @, A-Z or blank=all)    _
      Language for message file (** for all) . ____

      NOTE: Generation of Field Reference and Message File is
            submitted to batch. No data files may be
            created during this generation process.

      Press Enter to Rebuild Field Reference Files      F3=Exit without Rebuild
  
```

Work with Data File Design Aid

This chapter contains these topics:

- [Section 17.1, "About the Data File Design Aid"](#)
- [Section 17.2, "About Assigning the File Prefix"](#)
- [Section 17.3, "Entering Data File Design Aid"](#)
- [Section 17.4, "Function Keys From File Design Aid"](#)
- [Section 17.5, "What are the Data File Design Aid Standards?"](#)
- [Section 17.6, "Data File Design Aid Summary"](#)

17.1 About the Data File Design Aid

JD Edwards World Data File Design Aid provides a simple mechanism for creating Data Description Specifications (DDS) for physical and logical files.

To enforce standards, JD Edwards World recommends against file changes made through the Source Entry Utility (SEU). Changes should be done through File Design Aid. Non-JD Edwards World changes to a JD Edwards World file make support difficult if not impossible.

17.1.1 What You Should Know About

Topic	Description
Enforced Prefixes	<p>Data items are defined in the JD Edwards World Data Dictionary. Within files, these data item names are qualified with a prefix to make them unique. Every data file in JD Edwards World software is assigned a two-character prefix. For example:</p> <ul style="list-style-type: none">■ Business Unit Master file is MC■ Address Book Master is AB■ The data name MCU in the Business Unit Master file is MCMCU■ The data name in the Address Book file is ABMCU■ Use of prefixes ensures that data item names are both consistent and unique.
Enforced naming conventions	<p>JD Edwards World file names begin with an F prefix and the format within that file begins with an I prefix.</p>

Topic	Description
Data Dictionary validation	<ul style="list-style-type: none"> All data fields defined in files are verified against the Data Dictionary. Programmers cannot enter data names without first creating and documenting them in the Data Dictionary. Prefixes of \$ and @ are reserved for client use.
Automatic reference to Field Reference Files	<ul style="list-style-type: none"> JD Edwards World uses IBM's Field Reference File (FRF) facility when creating files. When creating the DDS for a file, you need only enter the Data Dictionary data item name. The Data File Design Aid automatically enters the correct keywords for referring to the FRFs. If data items are added to the Data Dictionary, the user needs to run the rebuild for the Field Reference Files before using Data File Design Aid.
Resequencing	<ul style="list-style-type: none"> A sequence number allows you to rearrange data items within a file while you are designing.

17.2 About Assigning the File Prefix

File prefixes are assigned through the Software Versions Repository. The information in this form comes from a logical file built over the Software Versions Repository file, F9801. The information in this form is updated automatically whenever the user adds, updates, or deletes software version repository records for files.

Caution: Programmers are responsible for not assigning the same prefix to two different files used in the same program.

Figure 17–1 Software Versions Repository screen

```

9801                               Software Versions Repository

Action Code . . . I
Member ID . . . F92801
Description . . . SDM Item Master File
Function Code . . PF
Function Use . . . 210
System Code . . . 92
Reporting System 92
Base Member Name F92801
Maint/RSTDSP . . Omit Option. . . Generation Sev . .
Copy Data (Y/N) N Optional File. . SAR Common File. . N
O Source Object Source SAR Version S D User Date
P Library Library File Number ID C P ID Modified
JDFSRC71 JDPDTA71 JDESRC 241883 A71 1 HERITAGE 02/02/92
_____
_____
_____
_____
_____
_____
_____
Opt: 1=Browse 2=Edit 3=Copy 5=SAR 8=Print 9=Dlt 10=Design 14=Crt F24=More

```

1. To view all file prefixes currently in use:

Press F1 on the File Prefix field.

Note: A file prefix can display in this list more than once if it is attached to more than one file.

Field	Explanation
Prefix	One or two character prefix for each field in a file
File Name	Member ID from SVR
File Description	The description of a file in the Software Versions Repository. The member description is consistent with the base member description.

Note: If creating a new logical file, the prefix defaults from the based-on physical file.

Pressing F10 from this form displays all file prefixes that you should not use.

17.3 Entering Data File Design Aid

To enter Data File Design Aid

1. Inquire on a physical file.
2. Copy the production source down to a development environment.
3. Choose Option 10 to take you to the appropriate Design Aid form based on the members Function Code value.
 - A PF or LF value takes you to File Design Aid.

Figure 17–2 Data File Design Aid screen

92102		Data File Design Aid		
File Description . . . SDM Item Master File				
Unique Keys(Y/N) . . . Y		Member ID. F92801		
File Prefix. QX		Src Library. PGFSRC		
		Source File Name . . . JDESRC		
Data Item.	Data Field Desc.	K/S	Function Specifications	Seq No
I92801		R		1.00
XIT	Item ID	-	REFFLD(XIT F98PRFX)	2.00
XDS	Description	-	REFFLD(XDS F98PRFX)	3.00
XTY	Item Type	-	REFFLD(XTY F98PRFX)	4.00
XDT	Date Last Ship	-	REFFLD(XDT F98PRFX)	5.00
XBU	Business Unit	-	REFFLD(XCC F98PRFX)	6.00
XQT	Quantity - On Hand	-	REFFLD(XQT F98PRFX)	7.00
XUM	Item Unit of Measur	-	REFFLD(XUM F98PRFX)	8.00
X001	Item Category Code	-	REFFLD(X001 F98PRFX)	9.00
X002	Item Category Code	-	REFFLD(X002 F98PRFX)	10.00
X003	Item Category Code	-	REFFLD(X003 F98PRFX)	11.00
X004	Item Category Code	-	REFFLD(X004 F98PRFX)	12.00
X005	Item Category Code	-	REFFLD(X005 F98PRFX)	13.00
XIT	Item ID	K		14.00
F3=Exit/Save F16=Search by File F1=Search by Name F4=Field Attributes				

Field	Explanation
File Description	SVR member description for the file.

Field	Explanation
Unique Keys (Y/N)	<p>Specifies if the data file contains unique keys.</p> <ul style="list-style-type: none"> ■ If you say yes, Data File Design Aid puts the UNIQUE keyword in the DDS. As a result, no two records may have duplicate keys. ■ If you say no, Data File Design Aid leaves the UNIQUE keyword out of the file DDS. <p><i>Form-specific information</i></p> <p>If a file can be organized so the key will uniquely identify only one specific record, define the Unique Keys field. Uniqueness can be specified for physical and logical files.</p> <p>Most JD Edwards World physical files in the past have been defined as sequential and logicals were used for creating keyed sequences. More recently, however, physical files have been keyed.</p>
Member ID	The name assigned to the file. Defaults in from the Software Versions Repository.
File Prefix	This is the SVR field which indicates the prefix associated with a file.
Src Library	The library where the source for the data file resides. Defaults in from the Software Versions Repository.
Source File Name	The name of the file within the source library that contains the source member. Defaults in from the Software Versions Repository.
Based on File	<p>Designates the physical file on which a logical file is based.</p> <ul style="list-style-type: none"> ■ Defaults in from the Software Versions Repository and only displays for logical files. <p><i>Form-specific information</i></p> <p>For physical and logical files, the Based On File is the same as the physical file.</p> <p>For join files, the Based On File is the name of the first physical file that the join is built over.</p>
Data Item	<p>The Data Dictionary name of the field or the record format name.</p> <ul style="list-style-type: none"> ■ The file prefix is added to create a unique data name for each field specified in this field. ■ The record format line is automatically defaulted in.
K/S	Identifies the DDS Type indicating whether the field is a format name (R), key field (K), select logic field (S) or omit logic field (O). It may be used in conjunction with information that displays in the Function Specifications field.

Field	Explanation
Function Specifications	<p>Used with the DDS Type specified in the K/S column.</p> <ul style="list-style-type: none"> ■ If it is a record format name this field will be blank. ■ Contains the PFILE (Filename) statement for a logical file and you enter: JFILE (Filename Filename) statement for join files listing all the files involved in the join. Right below the JFILE statement, you use the JFLD (Field Field) statement to list the fields that are used to construct the join. ■ If you are defining a normal data item and you want the FRF field designation pulled in, you leave it blank. ■ If you are defining Select/Omit logic on a field, you enter the logic itself. ■ If you are defining a key data item, you may leave the Function Specifications field blank, or you may enter any valid DDS function keyword (DESCEND, RENAME, SIGNED, ZONE, and so forth).
Seq No	<p>Determines the order of the fields in the file.</p> <p><i>Form-specific information</i></p> <p>When designing a physical, list the component fields in descending order of their importance to the file. The K entries for keyed fields must always be last in sequence number within the Data File Design Aid program itself.</p>
Data Item Type	A is for Alpha, S is for simple numeric, P is for Packed numeric, and O is for Open (any character can be entered).
Item Size	Length of field taken from the Data Dictionary.
Display Decimals	Usually Packed fields, the number of decimal places on a display. The data will actually be stored in the field in the file as a whole number.

Note: The detail area includes additional information: data item type, data item size, and number of display decimals. This information will be available after the enter key is pressed, at which time the information will be retrieved from the Data Dictionary along with the REFFLD keyword which indicates which F98FRF file was used to retrieve the field information.

17.3.1 Sample - Logical File

JD Edwards World logical files contain all fields from the PF, only keys are specified.

Figure 17-3 Data File Design Aid screen

```

92102                                Data File Design Aid
File Description . . . LF - Business Unit, Item ID
Unique Keys(Y/N) . . . X              Member ID. . . . . F92801LA
File Prefix. . . . . QX              Src Library. . . . . PGFSRC
Based on File. . . . . F92801        Source File Name . . . JDESRC

Data Item. Data Field Desc.  K/S Function Specifications      Seq No
I92801      Business Unit    E  PFILE(F92801)                  1.00
KCC         Item ID          K  _____                  2.00
KIT         _____        K  _____                  3.00
_____     _____        K  _____                  4.00
_____     _____        K  _____                  5.00
_____     _____        K  _____                  6.00
_____     _____        K  _____                  7.00
_____     _____        K  _____                  8.00
_____     _____        K  _____                  9.00
_____     _____        K  _____                 10.00
_____     _____        K  _____                 11.00
_____     _____        K  _____                 12.00
_____     _____        K  _____                 13.00
_____     _____        K  _____                 14.00

F3=Exit/Save  F16=Search by File  F1=Search by Name  F4=Field Attributes
  
```

17.3.2 Sample - Logical File with Selects

This example represents an AND condition for the selects.

Figure 17-4 Data File Design Aid screen (AND condition for selects)

```

92102                                Data File Design Aid
File Description . . . LF - Acct ID, LT, DOI, Sub LT, Serv Date, Doc Ty#
Unique Keys(Y/N) . . . _              Member ID. . . . . P0911LH
File Prefix. . . . . GL              Src Library. . . . . PGFSRC
Based on File. . . . . P0911        Source File Name . . . JDESRC

Data Item. Data Field Desc.  K/S Function Specifications      Seq No
I0911      Account ID        E  PFILE(P0911)                  1.00
AID         Ledger Type      K  _____                  2.00
LT          DOI Sub          K  _____                  3.00
DOI         Subledger        K  _____                  4.00
SBL         Date - Service/Tax K  _____                  5.00
DSV         Date - Service/Tax K  _____                  6.00
DSVY        Date - Service/Tax K  _____                  7.00
DSVM        Date - Service/Tax K  _____                  8.00
DSVD        Date - Service/Tax K  _____                  9.00
DCT         Document Type    K  _____                 10.00
DOC         Document (Voucher, K  _____                 11.00
KCO         Document Company K  _____                 12.00
POST        G/L Posted Code  S  CMP(EQ 'P')                 13.00
BC          Bill Code        -  CMP(NE 'H')                 14.00

F3=Exit/Save  F16=Search by File  F1=Search by Name  F4=Field Attributes
  
```

17.3.3 Sample - Logical File with Omits

This example represents an AND condition for the omits.

Figure 17–5 Data File Design Aid screen (AND condition for omits)

```

92102                                Data File Design Aid
File Description . . . LP - Report Code 01
Unique Keys (Y/N) . . . _ Member ID. . . . . F0101LH
File Prefix. . . . . AB Src Library. . . . . PGFSRC
Based on File. . . . . F0101 Source File Name . . . JDESRC

Data Item. Data Field Desc. K/S Function Specifications Seq No
I0101      Category Code - Add E PFILE(F0101 ) 1.00
AC01      Name - Alpha K 2.00
ALPH      Address Number K 3.00
ANS      Date - First Invoice Q COMP(EQ 000000) 4.00
DEI      Date - Last Invoice - COMP(EQ 000000) 5.00
DLI      7.00
          8.00
          9.00
          10.00
          11.00
          12.00
          13.00
          14.00

F3=Exit/Save F16=Search by File F1=Search by Name F4=Field Attributes

```

Creating Join Files and Work Files

To create a join file or a work file, you should use the Source Entry Utility.

17.4 Function Keys From File Design Aid

Function Key	Definition
F1	Using F1 in the Data Item field takes you to the Data Item Search form.
F2	Access the command line to enter a JD Edwards World or IBM command without having to exit to Command Entry or a menu. If you are secured out of Command Entry or Menu Traveling, you can still get to this command line but you cannot execute commands or menu travel.
F3	Press to exit Data File Design Aid, the following form displays.

Example F3 - Data File Design Aid

Figure 17–6 Example F3 - Data File Design Aid screen

```

                                Data File Design Aid

Update Source Changes (Y/N) . . N

Member ID. . . . . F92801
File ID. . . . . JDESRC
Src Library. . . . . PGFSRC

Description. . . . . SDM Item Master File
Function Code. . . . . PF

Return to Design (Y/N) . . . N

```

On this form, you can choose to:

- Exit without saving the changes made.
- Exit and save the changes made.

- Save the changes made and return to the Design Aid form.

Function Key	Definition
F6	This form provides access to other repository services within JD Edwards World.
F16	Accesses the File Field Description form to view file formats and field descriptions for any file on the system

17.5 What are the Data File Design Aid Standards?

Field	Explanation
Unique Keys	<p>Specifies if the data file contains unique keys. If Yes, FDA puts the UNIQUE keyword in the DDS. No two records in the data file can have duplicate data in the key fields. If No, FDA leaves the UNIQUE keyword out of the file DDS. Records with duplicate keys will be allowed in the data file.</p> <p><i>Form-specific information</i></p> <p>If a file can be organized so the key will uniquely identify only one specific record, define the Unique Keys field. Uniqueness can be specified for physical and logical files.</p> <p>Most JD Edwards World physical files in the past have been defined as arrival sequence and logicals were used for creating keyed sequences. More recently, however, physical files have been keyed.</p>
File Description	<p>The description of a record in the Software Versions Repository file. The member description is often consistent with the base member description.</p> <p><i>Form-specific information</i></p> <p>The description associated with each file is used to further identify the relation of the file and its purpose.</p> <ul style="list-style-type: none"> ■ Physical files should have a description that explains the purpose of the file. ■ Logical files should be designated as follows: LF - fldname, fldname, fldname: where fldname is a key field. ■ Join files should be designated as follows: JF - filename/ filename/ filename - fldname, fldname, fldname; where the filename is a file over which the join is built and fldname is the key field joining the files. ■ Work files should be designated as follows: WF - filename; where filename is the file that the work file accesses.
Based On File	<p>Designates the physical file on which a logical file is based.</p> <ul style="list-style-type: none"> ■ Defaults in from the Software Versions Repository and only displays for logical files. <p><i>Form-specific information</i></p> <p>For physical and logical files, the Based On File is the same as the physical file.</p> <p>For join files, the Based On File is the name of the first physical file that the join is built over.</p>

Field	Explanation
Ordering of Fields	Determines the order of the fields in the file. <i>Form-specific information</i> When designing a physical, list the component fields in descending order of their importance to the file. Keyed items must always be last in sequence number within the Data File Design Aid program itself.
Logical Files	Logical files may include all fields; we do not define specific fields.
Recompiling	When recompiling a physical, you need to delete any logicals or joins from the data file library and then recompile them after the physical has been recompiled.
Record Format	It is a JD Edwards World standard that only one record format is defined for each physical and logical file. Joins may contain more. Record format names begin with I followed by the physical file number.
Field Reference Files	Used in all file creations to retrieve field descriptions.

17.5.1 Merge Functions for Program Temporary Fix (PTF) Installations and Reinstallations

The PTF installation or reinstallation does the following:

- A PTF installation prints a report that identifies all files that are in the PTF library but were not installed in the client's production libraries. You must add the new files manually into the appropriate libraries.
- A reinstallation prints a report to add new files into appropriate libraries.
- Updates JDFDATA in a PTF installation; replaces JDFDATA in a reinstallation.
- May add new keys to both logical and physical files.
- May change the file format of logical or physical files.

Note: The Data Model displays relational models of the major files within the JD Edwards World environment.

17.6 Data File Design Aid Summary

In summary, the Data File Design Aid has the following features or restrictions:

- It has direct ties to the Data Dictionary and the Field Reference Files.
- It attaches a two-character prefix to each data item to create a unique field within the file.
- A record format must be defined for all files with a K/S value of R. This is the default record format.
- The PFILE keyword is automatically pulled in for logical files.
- Logical files must have a Based on File designated in the Software Versions Repository, which carries over to the design form.
- You must enter the data item names from the Data Dictionary.
- Perform these steps for creating a new file:

- Data items must reside in the Data Dictionary.
- You must rebuild the FRF files if new data items were added (from the Rebuilds menu, G9642).
- A new file must have a file prefix specified on the Software Versions Repository record.
- Field Reference Files are characterized by the following:
 - They contain all the definitions for creating fields.
 - There are 28 in all (F98FRFA-F98FRFZ, F98FRF\$, and F98FRF@).
 - Each field reference file points to all the data items beginning with the same character as the field reference file.

For example: F98FRFA is a logical file which connects the F98FRFA1, F98FRFA2, and so on. physical files which contain all the Data Dictionary data items beginning with the letter A.

Work with Screen Design Aid

This chapter contains these topics:

- [Section 18.1, "About Screen Design Aid"](#)
- [Section 18.2, "Editing Commands"](#)
- [Section 18.3, "Prefix Standards"](#)
- [Section 18.4, "Field Name Standards"](#)
- [Section 18.6, "Working with Screen Design Aid"](#)
- [Section 18.7, "Function Key Exits"](#)
- [Section 18.8, "Updating an Existing Field"](#)
- [Section 18.9, "Accessing Fast Path Create for a New Screen"](#)
- [Section 18.10, "Adding Fields without Using a Pick List"](#)
- [Section 18.11, "Adding a Literal Field"](#)
- [Section 18.12, "Using the *BOTH and *ALL Features"](#)
- [Section 18.13, "Compiling Your Screen"](#)
- [Section 18.14, "Screen Design Standards and Tips"](#)
- [Section 18.15, "Adding Screen Fields Using Pick List"](#)
- [Section 18.16, "Selecting Database Fields"](#)
- [Section 18.17, "Placing Fields on a Screen Using a Pick List"](#)
- [Section 18.18, "Function Key Exits from Screen Design Aid"](#)
- [Section 18.19, "Changing Subfile Boundaries"](#)
- [Section 18.20, "Process Overview - Placing Selected Fields"](#)
- [Section 18.21, "Process Overview - Revising the Field Definition"](#)
- [Section 18.22, "Process Overview - Revising Vocabulary and Function Keys"](#)
- [Section 18.23, "Function Keys for Screen and Display Format Control"](#)
- [Section 18.24, "Summary of Screen Design Aid"](#)

18.1 About Screen Design Aid

Screen Design Aid (SDA) is an interactive feature you use to design and maintain screens. This full-screen editor validates your work against the Data Dictionary and

adds records to vocabulary overrides. You can work with multiple record formats simultaneously and you can move fields from one format to another.

Below is a list of some features of SDA:

- Design is conducted in a safe work environment. If you make a mistake you can exit without changing a screen's Data Description Specifications (DDS).
- Screen specifications are stored in data structures in the QRECOVERY library. This is similar to the IBM recovery of SEU.
- You can create a screen in normal mode (80 columns by 24 rows) or wide mode (132 columns by 27 rows). You can also design wide screens on 80 column devices using a windowing facility.
- Answering initial yes/no options allows you to create a basic screen skeleton for a subfile, non-subfile or window-style screen.
- SDA is fully integrated with the Data Dictionary and vocabulary override files. You can place fields on the screen by referring to a Data Dictionary name and override default attributes, if necessary. You can place vocabulary override fields on the screen and, if desired, modify their contents through the full screen.
- SDA is fully integrated with the system database. You can select fields from the system database, create a pick list and then reorder fields in the pick list. You can place fields on the screen individually or all at once by pinpointing locations on the full screen with an ampersand (&) or asterisk (*).
- SDA has full screen capability. You can add, change, move, or delete fields by entering control characters directly on the screen.
- Unlike the IBM SDA, JD Edwards World SDA allows you to work with multiple record formats at one time. You can display and change any combination of formats simultaneously (as long as they do not overlap). You can also move fields from one format to another.
- SDA allows you to simulate a screen at program execution time. You can run the simulation for any set of conditioning indicators to represent a particular error condition or other program functions.

18.2 Editing Commands

Standard editing commands available in SDA include:

Command	Description
*DEL	Delete fields (used in Field Definition window)
d (cannot be uppercase D)	Delete fields (used in Field Definition window)
<<, >>	Shift fields to the left or right
(xx...xx) 'xx...xx'	Literals (use apostrophes)
-	Move from position.
=	Move to position.
--	Move block from position
=	Move block to position.
F7	Restore the screen if you accidentally press Field Exit or a power failure knocks you off.

Precautions and automatic features of the SDA include:

- Do not use the INSERT or DELETE keys while in the actual design portion of SDA.
- SDA automatically assigns editing indicators.
 - Indicators 40 to 79 are reserved for editing.
 - Indicator 40 is reserved for the Action Code field.
 - Indicator 41 is reserved for the key fields.
 - If you use all available indicators, you will get an error message.
- Indicator 37 is used in subfile screens to highlight all fields on the last line of the subfile to indicate that no more records exist.

18.3 Prefix Standards

Prefix standards for use in the SDA include:

Prefix	Description
VD	<p>Screen display fields.</p> <ul style="list-style-type: none"> ■ VD fields display database information from the file being used for the screen and you can use them to enter database information. ■ Default size is the size specified in the Data Dictionary for the data item being displayed. ■ Reside in the based on file and can be input/output.
SF	<p>Subfile fields.</p> <ul style="list-style-type: none"> ■ Same as VD fields, but they are in a subfile. ■ Default size is the size specified in the Data Dictionary for the data item being displayed plus editing characters.
SH	<p>Subfile Hidden fields.</p> <p>SH fields store data that is not displayed on a screen.</p>

18.4 Field Name Standards

Field name standards for use in SDA include:

Field	Standard
VC0 - Screen constants	<p>VC0 (zero) fields display definitions or descriptions for a single piece of data or for a group of data.</p> <p>VC0 fields are always output fields and the description that is loaded into the VC0 field is obtained from a separate file</p> <ul style="list-style-type: none"> ■ For example, if creating a screen using the Item Master file (F92801), you need to take the Item Master Business Unit field and chain out to the Business Unit Master file (F0006) to get the description for that Business Unit. ■ You enter *VC0 for the Field Name field in the Field Definition window when adding a new constant or description field. ■ The default size for VC0 fields is 30.

Field	Standard
VTX - Screen text	<p>These fields display the row description or column headings from the Data Dictionary.</p> <ul style="list-style-type: none"> The text that displays in the VTX fields is stored in the Vocabulary Overrides file (F9220). You can type directly over Vocabulary Override fields in SDA. <p>You enter *VTX in the Field Name field in the Field Definition window for the next sequential text field name.</p> <ul style="list-style-type: none"> The default size for VTX fields is 16.
Line 24 is always VDL24	<p>You cannot change the text for Line 24 by using the Field Definition window because it is too large.</p> <p>Type over the text in Line 24 to change it.</p>
TTL@	<p>Uses the default title from Vocabulary Overrides if the screen program is called from another program.</p> <p>Uses the menu selection text if the screen is called from a menu.</p>
ACTION	<p>Action Code field.</p> <ul style="list-style-type: none"> The name assigned by SDA. The default cursor keyword is assigned to the action code field.
*LITER - Literal fields	<p>Literals are added by placing apostrophes around the text on the screen and pressing Enter. (For example, 'V928011').</p>

18.5 Updating or Adding Fields through SDA

Field	Explanation
* - Field Definition Window	<p>Allows you to update existing fields and add new fields without using the Pick List feature. Place the * one space to the left of the first character of the requested field to display the Field Definition window.</p> <ul style="list-style-type: none"> To add a field, place an asterisk (*) on the SDA design area where you want to add the field. To update a field, place an asterisk in the attribute character (first position to the left) of the field you want to update. <p>You can pull in the screen field, the Row Description/ Column Headings (VTX), and a 30 character description field (VC0) all at the same time by making special entries in the Field Name field on the window (*BOTH or *ALL).</p>
& - Field Selection Window	<p>Allows you to add new fields using the Pick List feature</p> <p>Causes the Field Selection window to display.</p> <p>To place a field on the screen from your Pick List, place an ampersand (&) on the SDA design area where you want to place the first character of the field.</p> <p>Allows you to pull in one or all of the following at the same time:</p> <ul style="list-style-type: none"> The Row Description/Column Headings (VTX) The screen field A description field (VC0)

18.6 Working with Screen Design Aid

To work with Screen Design Aid you must have access to the source file.

To work with Screen Design Aid

1. Inquire on a screen in SVR.
2. Copy the production source code down to a development environment using selection 3.
3. Choose option 10 to access the appropriate Design Aid screen based on the member's Function Code value.

Figure 18–1 Item Search screen

[illegible]

18.7 Function Key Exits

F12 - Return to Previous Panel

F12 - Exits you out of the current screen or utility and returns to the screen you were on previously.

Use F12 instead of F3; however, if you are calling another program outside of SDA (for example: F13, F24), you must use F3 to return to SDA.

18.8 Updating an Existing Field

To update an existing field

Place an asterisk (*) in front of the field (in the attribute character). This will bring up the Field Definition window.

```

928200                                Item Search

*Business Unit . BBBBBBBBBBBB  00000000000000000000000000000000

O   Item                               Ship
P   Number                             Date    Quantity On Hand UM
R   00000000  00000000000000000000000000000000  00000000  0000000000000000  00
      Code 1 . 000 Code 2 . 000 Code 3 . 000 Code 4 . 000 Code 5 . 000
R   00000000  00000000000000000000000000000000  00000000  0000000000000000  00
      Code 1 . 000 Code 2 . 000 Code 3 . 000 Code 4 . 000 Code 5 . 000
R   00000000  00000000000000000000000000000000  00000000  0000000000000000  00
      Code 1 . 000 Code 2 . 000 Code 3 . 000 Code 4 . 000 Code 5 . 000
R   00000000  00000000000000000000000000000000  00000000  0000000000000000  00
Screen: V928200-----Field-Definition-----Format:-V928200C-
Dict Name  XCC          Text       Business Unit. _____
Data Type  A           Field Name  VTX004                Cond Ind
Row/Column  _3_ _2     Field Use   Q                    RI - _ _ _ _
Size        _14_ _     Text Form   E                    HI - _ _ _ _
Dft Cursor  _         Edited       _                     UL - _ _ _ _
Lower Case  _         Change       _                     ND - _ _ _ _
OVRDTA      _         Duplicate    _                     BL - _ _ _ _
OVRATR      _         Field Cond   _ _ _ _ _             PR - _ _ _ _
                                                PC - _ _ _ _

--F3=Exit--F12=Prev-Screen--F17=Dictionary-----

```

Field	Explanation
Dict Name	Identifies the four-byte data item name from the Data Dictionary. This is the only required field for most data items, the rest will default.
Text	Describes the Dictionary Name. VTX fields contain the soft coded description from the Data Dictionary that updates F9220 (Vocabulary Overrides).
Data Type	S – Numeric data items. A – Alphanumeric. Blank – (w/decimal position blank in Size field)defaults to A. Blank– (w/decimal position defined in Size field) defaults to an S. All – JD Edwards World fields are defined as A.
Field Name	Identifies a screen field name. <ul style="list-style-type: none"> ■ *VTX (VTX001-VTX200) automatically assigns next available. ■ *VC0 (VC0001-VC0200) automatically assigns next available. ■ *LITER literal fields. ■ *BOTH or *ALL to bring in screen (VD), VC0, and/or VTX fields.
Row/Column	Two 3-digit fields that define the row and column location of field.
Field Use	How the data is to be used on the screen. I – Input only O – Output only B – Both input and output H – Hidden field M – IBM Message field

Field	Explanation
Size	Two fields identify the length of the data item and for numeric fields, the decimal places. <ul style="list-style-type: none"> ■ If left blank, automatically fills.
Text Form	For VTX fields, identifies the field from the Data Dictionary that is used for headings. R – Row Description. C – Column Heading 1. D – Column Heading 2.
Dft Cursor	Starting cursor position on a data entry screen, Y or N.
Edited	Should the field be checked for error conditions, Y or N. <ul style="list-style-type: none"> ■ Will assign an indicator for error handling and default Condition Indicator information. ■ Assigns error indicators 40-79. ■ Key fields, K. Assigns indicator 41.
Lower Case	To allow lowercase, Y or N.
Change	CHANGE keyword is in effect, Y or N. The indicator will be set on whenever the value in this field is changed.
OVERDTA	OVRDTA keyword is in effect, Y or N. Used with PUTOVR to override data that is in a field already on the screen.

Note: You should edit all input capable fields. (There will be a "Y" or "K" in the "Edited" field).

Field	Explanation
Duplicate	Duplicate the data. Only valid for a SFL format. Puts the DUP keyword in the screen/report DDS but the Program Generator does not generate any code to enable this.
OVRATR	OVRATR keyword is in effect, Y or N. Used with PUTOVR to override display attributes of a field on the screen.
Field Cond	Field Conditioning Indicators. Determines if the user can see the field or not.
Condition Indicators	To set a condition indicator on a field, enter a Y in the first blank to the right of the desired condition. You have the option of entering up to 3 indicators to be associated with the condition. Three spaces are provided to allow an N prior to the two digit indicator to create a negative condition. The allowed conditions are: RI – Reverse Image HI – Highlight UL – Underline ND – Nondisplay BL – Blink PR – Protect PC – Place Cursor A blank or N will deactivate the condition.

Field	Explanation
Color	F8 toggles to display the color attributes for the field. The first blank to the right of each color controls the order that multiple colors will appear in the DDS (1-7). If multiple colors are defined, the first enabled color displays and the remaining colors are ignored. A blank or N disables the color. The color values default based on whether you selected JD Edwards World or SAA colors in QJDF.

18.9 Accessing Fast Path Create for a New Screen

When you design the format for a new screen, you have the option to use Fast Path Create.

To access Fast Path Create for a new screen

1. Locate your screen and enter selection 10.

If SDA cannot find the existing DDS for your screen, the Create New Screen displays:

Figure 18–3 Create New Screen

```

92510                               Create New Screen
Screen: V927400
Text Description. . . Item Search
(Y/N)
Fast Path Create                     Y
Screen Type
Action Code                         Y
Window                             N
Wide Screen (Y/N) . . . N
Subfile Creation
Subfile                             N
Subfile Fold                        N
Subfile Clear                       Y
Selection Exits                     N
Record Format Level
PUTOVR                             N
OVERLAY                             Y
F3=Exit    F12=Previous

```

Field	Explanation
Screen and Text Description	Taken from the SVR entry for this member.
Fast Path Create	Automatically create record formats, fields, file, and record level parameters.
Action Code	Automatically create an Action Code field.
Window	Screen is a window.
Wide Screen	Screen is in wide format (132 columns by 27 rows) or normal format (80 columns by 24 rows).
Subfile	Create subfile format.
Subfile Fold	Create a fold area in the subfile using SFLDROP and SFLFOLD keywords.
Subfile Clear	Use SFLCLR (Y) OR SFLINZ (N).
Selection Exits	Create selection exits to allow the user to exit the program using selection codes.

Field	Explanation
PUTOVR	The screen record format uses the PUTOVR keyword. Causes the screen to be erased and redisplayed when a window is displayed.
OVERLAY	The screen record format uses the OVERLAY keyword. Will not erase and redisplay screen when a window is displayed. Most JD Edwards World screens use OVERLAY.

2. Press Enter and SDA begins the creation of your screen based on what you specified.

Figure 18–4 Example - Screen with Action Code and No Subfile

```

92700      Item Maintenance
Action Code. . . B

F24=More Keys

```

Example - Screen with Action Code and Subfile

Figure 18–5 *Item Maintenance screen*

[illegible]

Figure 18–6 Example - Screen with Action Code, Subfile, and Selection Exits

```

92700                                Item Maintenance
Action Code. . . B

O
P
B
B
B
B
B
B
B
B
B
B
B
B
B

F24=More Keys

```

18.10 Adding Fields without Using a Pick List

To add a Screen Text Field (VTX)

1. Place an asterisk (*) on the SDA design area where you want to place the screen text field.

Figure 18–7 Item Master Information screen

```

928011                                Item Master Information
Action Code. . . B
*

Screen: V928011-----Field Definition-----Format: V9280111-
Dict Name  XIT      Text
Data Type  -        Field Name  *VTX      Cond Ind
Row/Column -        Field Use   -          -
Size       -        Text Form   E          -
Dft Cursor -        Edited      -          -
Lower Case -        Change      -          -
OVRDTA     -        Duplicate   -          -
OVRATR     -        Field Cond  -          -
--F3=Exit  F12=Prev Screen F17=Dictionary-----

```

2. When the Field Definition window displays, do the following:
 - In the Dict Name field, enter the Data Dictionary item name.
 - In the Field Name field, specify *VTX.

The system assigns the next available VTX number.
3. Enter a value in the Text Form field to indicate whether the row description or a column heading from the Data Dictionary should be used as the text.
 - R - Row Description.
 - C - Column Heading 1.
 - D - Column Heading 2.

Note: Text defaults from the Data Dictionary based upon the Text Form value. The default value is R for non-subfile formats.

4. Enter a value in the Size field only if you want to override the default length of 16 for the Row Description that will be brought in.

Note: You should start your fields in column two (unless selection exits exist). This allows you to place an asterisk to the left of the first field in column one.

To add a Database Screen Field (VD)

1. Place an * on the SDA design area where you want the field to be placed.

Figure 18–8 Item Master Information screen

928011 Item Master Information

Action Code . . . R

*

Screen: V928011-----Field Definition-----Format: V9280111-

Dict Name	XIT	Text				
Data Type		Field Name			Cond Ind	
Row/Column		Field Use	R		RI	
Size		Text Form			HI	
Dft Cursor		Edited			UL	
Lower Case		Change			ND	
OVRDTA		Duplicate			BL	
OVRATR		Field Cond			PR	
					PC	

--F3=Exit F12=Prev Screen F17=Dictionary--

2. On the Field Definition window, enter the Data Dictionary item name in the Dict Name field.
3. Specify a field use:
 - The default for field use is O for output.
 - Editing indicators are not assigned for output fields.
4. The Data Type, Size, and Text default from the Data Dictionary.

To add a Screen Constant Field (VC0)

1. Place an * on the SDA design area where you want to place the description or constant field.

Figure 18–9 Item Master Information screen

```

928011          Item Master Information
Action Code. . . R

*

Screen: V928011-----Field Definition-----Format: V9280111-
Dict Name      Text
Data Type      Field Name *VC0          Cond Ind
Row/Column     Field Use      RI
Size           Text Form      HI
Dft Cursor     Edited         UL
Lower Case     Change         ND
OVRDTA         Duplicate      BL
OVRATR         Field Cond     PR
                                   PC
--F3=Exit  F12=Prev Screen  F17=Dictionary-----

```

The Field Definition window displays.

- On the Field Definition window, specify *VCO in the Field Name field.
The system assigns the next available VC0 number.
- To override the default length of 30, enter a value in the size field.

18.11 Adding a Literal Field

JD Edwards World standard is that the only literal on a screen is the program ID in the top left corner.

To add a literal field

Figure 18–10 Blank Item Master Information screen

```

'928011'          Item Master Information

```

- Enter the literal text in the SDA Design area.
- Enclose the text within single quotes.
- Press Enter.

18.12 Using the *BOTH and *ALL Features

The Field Definition window allows you to enter some special keywords in the Field Name field. Two of these special keywords are *BOTH and *ALL.

This feature provides for placement of multiple fields with a single entry.

18.12.1 Using *BOTH

If you use the keyword *BOTH with a valid data dictionary item, screen design will place a VTX field and a screen (VD) field on the screen.

To use *BOTH
On Field Definition

Figure 18-11 Item Master Information screen

```
928011 Item Master Information
Action Code. . . R
Item ID. . . . . Business Unit. . . . .
Item Type. . . . . Date Last Ship. . . . . Qty On Hand. . . . .
*
Item Code 001. . . . .
Screen: V928011-----Field Definition-----Format: V9280111-
Dict Name XUM Text
Data Type Field Name *BOTH Cond Ind
Row/Column Field Use RI
Size Text Form HI
Dft Cursor Edited UL
Lower Case Change ND
OVRDTA Duplicate BL
OVRATR Field Cond PR
PC
--F3=Exit F12=Prev Screen F17=Dictionary-----
```

Type "*BOTH" in the Field Name

When you enter *BOTH, the following screen displays in the SDA design area for the Unit of Measure field:

Figure 18-12 Item Master Information screen

```
928011 Item Master Information
Action Code. . . . .
Item ID. . . . . Item Desc. . . . .
Business Unit. . . . .
Item Type. . . . .
Date Last Ship. . . . .
Quantity On Hand. . . . .
Unit of Measure. . . . .
Item Code 001. . . . .
Item Code 002. . . . .
Item Code 003. . . . .
Item Code 004. . . . .
Item Code 005. . . . .
F24=More Keys
```

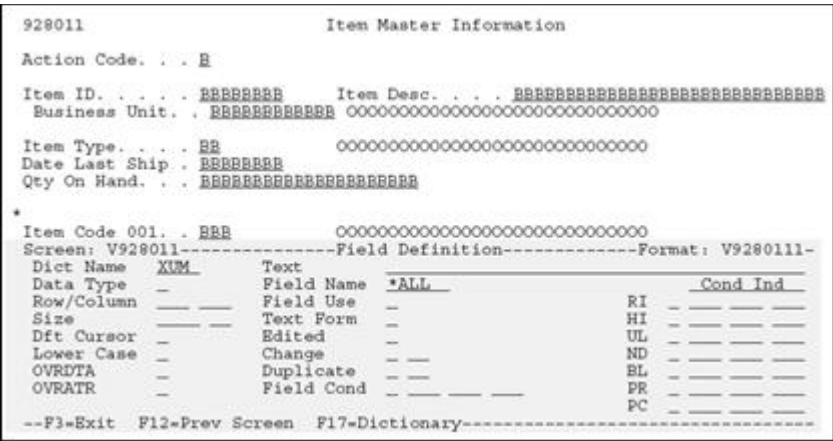
18.12.2 Using *ALL

If you use the keyword *ALL with a valid Data Dictionary item, screen design places a VTX field, a screen (VD) field, and a VC0 field on the screen.

To use *ALL

On the Field Definition window

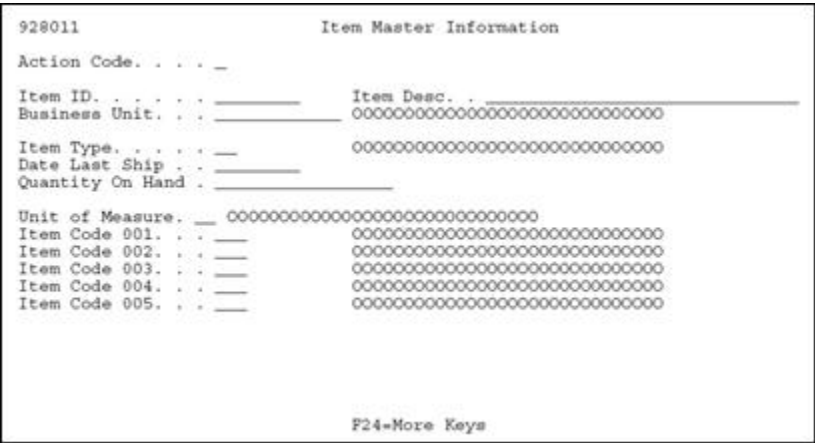
Figure 18–13 Field Definition portion of the Item Master Information screen



Type "*ALL" in the Field Name.

When you enter *ALL, the following screen displays in the SDA design area for the Unit of Measure field:

Figure 18–14 Unit of Measure Field on the Item Master Information screen



Field Default Values

The following are field defaults in SDA:

Field	Explanation
VD - Screen Display field	<ul style="list-style-type: none"> Output only <p>You can enter a B in the Field Use field to override the default and change it to both input and output.</p> <ul style="list-style-type: none"> No Editing <p>If you enter B in the Field Use field, the Edited field defaults to Y. The Condition Indicators default to Y and the next available editing indicator is assigned to that field.</p>
VTX - Screen Text field	<ul style="list-style-type: none"> 16 bytes long Defaults to Row description rather than column description
VC0 - Screen Constant field	<ul style="list-style-type: none"> 30 bytes long

18.12.3 Understanding the SDA Exit/Save Function Key

F3 - Design Aid Exit/Save

F3 - Saves, exits, or does both from Screen Design Aid.

Figure 18–15 Design Aid Exit/Save screen

```

92590                               Design Aid Exit/Save

Save DDS (Y/N) . . . N

Member ID. . . . . V928200
File ID. . . . . JDESEC
Src Library. . . . . STB101SRC

Description. . . . . Item Search
Function Code. . . . . DSPF

Return to Edit (Y/N) N

F12=Previous

```

Field	Explanation
Save DDS (Y/N)	Saves the DDS and updates or creates Vocabulary Overrides and Function Key definitions.
Member ID	<p>The record of the Software Versions Repository member to be copied.</p> <p><i>Screen-specific information</i></p> <p>Name of the screen.</p>
File ID	Identifies the file that will contain the source code.
Src Library	Identifies the library where the source code resides.
Description	The description of a record in the Software Versions Repository file. The member description is consistent with the base member description.
Function Code	Should be DSPF for a Screen.

Field	Explanation
Return to Edit (Y/N)	EOJ or allows return to SDA.

18.13 Compiling Your Screen

To compile your screen

From the Software Versions Repository screen

Figure 18–16 *Software Versions Repository screen*

```

9801                               Software Versions Repository

Action Code . . . I
Member ID . . . V928200
Description . . . Item Search
Function Code . . DSFE Video Display Files
Function Use . . 113 Inquiry
Install System . 22 Computer Assisted Design
Reporting System 22 Computer Assisted Design
Base Member Name P928200 File Prefix . .
Maint/RSTDSP . . I Omit Option . . - Generation Sev .
Copy Data (Y/N) N Optional File . . Common File . . N
O Source Object Source SAR Version S D User Date
P Library Library File Number ID C P ID Modified
JDESRC JDECRJ JDESRC 241883 A61 1- HERITAGE 11/04/91
-----
-----
-----
-----
-----
-----
-----
-----
-----
-----
Opt: 1=Browse 2=Edit 3=Copy 5=SAR 8=Print 9=Dlt 10=Design 14=Crt F24=More

```

Enter 14 next to the member in the subfile to create.

18.14 Screen Design Standards and Tips

18.14.1 Title

A screen title is limited to 30 characters and should match the Software Versions Repository (F9801). The title you enter in SDA updates the vocabulary overrides record for the screen. If you access the screen using a menu selection, the menu selection name overrides the screen title. If you access the screen using a selection option or function key, the vocabulary overrides title is used.

18.14.2 Line 24

You should document function keys on the right side of line 24 and you should document options on the left side. The following guidelines should also be followed:

- List both the options and function keys in numeric order.
- F24 should always appear and should say MORE KEYS or MORE.
- F4 should always read MORE DETAIL or DETAIL.
- Do not include standard exits of F3, F7, F22, Help, Rollup, Rolldown.
- Line 24 should be in reverse image during an error condition. Line 24 is conditioned to appear in reverse image on screens based on indicator 93.
- If you specify *SAME for the field "Error Text" for Line 24 in vocabulary overrides, then the text displayed is the same as the text specified for the normal Line 24.

18.14.3 Windows

Within a window, line 24 should include F3 and F24 when the window is initially displayed. When designing windows in SDA, fill in unused line space with literal fields to prevent data on the calling screen from showing through on the window. You can add the literal fields on the SDA screen as blanks with a single quote on each end or through the Field Definition window.

Figure 18-17 Unused Line Space

The screenshot shows a screen design with a window titled "09DBD-----Dep/Ben Addition & Review-----". The window contains several fields: "Action Code" with value "I", "Dep/Ben No." with value "4037", "Alpha Name" with value "Allen, Cindy", "Date Of Birth" with value "06/13/48", "SSN" with value "432-51-2468", "Dep/Ben Status", "Memo/Address" with value "2525 E. 11th Avenue", "Denver, Colorado", and "80206". Below the window, there are function keys: "F3=Exit", "F5=Return w/Value", "F24=More Keys", "Opt:1=Single Assignment", "2=Add/Rev D/B", "F4=Detail", "F21=Print", and "F24=More Keys". The window is surrounded by a border, and the unused line space is filled with literal fields.

18.14.4 Default Cursor

You set the default cursor attribute to Action Code for the input field closest to the upper-left corner of the screen.

18.14.5 Fold Area

Keep the number of Fold Area lines to no more than two lines to avoid excessive use of the cursor keys when the Fold Area is open.

18.14.6 Description Fields

Define all description input fields to allow for uppercase and lowercase letters DDS keyword CHECK(LC). Use VC0 descriptions when a field's value has no obvious meaning and you can retrieve a description from a master file or user defined codes.

18.14.7 Alpha Fields

Because of the dynamic nature of international currency, you must define every field as alpha. The only exception is that you can define hidden fields as numeric. JD Edwards World scrubbing routines handle the two-way conversion between numeric data in the file and formatted alpha screen fields.

18.14.8 General Aesthetics

The following are things you might want to consider when designing screens. They are guidelines that will give your screens a more professional look.

Alignment

Line up fields vertically. This includes row descriptions, input fields, and description fields. Fields on the left side of the screen should be in column space 2 (column 1 is needed for the attribute byte).

Figure 18–18 Lining Up Fields Vertically

Use periods to equalize length of row descriptions Line up input fields Line up VC0 fields of row descriptions

```

08332                               Single D/B Relation Entry
Action Code. . . . . I
Employee Number. . . . . 6001      Allen, Raymond
Plan ID. . . . . DEPCARE           Dependent Care Reimb. Account
Dependent/Beneficiary No.. 4036    Name . Allen, Cindy
Effective From . . . . . 01/01/90   Thru .
Relationship Data:
Dependent or Beneficiary . D
Relationship . . . . . C           Child
Dep/Ben Type . . . . .           Primary Beneficiary
Percent Allocated. . . . .
Dependent/Beneficiary Data:
Social Security Number . . 524-58-5113
Date Of Birth. . . . . 04/01/72
Dep/Ben Status . . . . .
Memo/Address Info. . . . . 2525 E. 11th Avenue
                           Denver, Colorado
                           80206
F5=D/B Relationships      F21=Print      F24=More Keys

```

Grouping Fields

When entering a descriptive heading to group related fields, use up to 40 characters for the description (or as long as space permits). Highlight the heading and end it with a colon. Underneath the heading, indent the group of fields one space to the right.

Figure 18–19 An Example of Grouped Fields

```

08332                               Single D/B Relation Entry
Action Code. . . . .
Employee Number. . . . .
Plan ID. . . . .
Dependent/Beneficiary No..      Name .
Effective From . . . . .        Thru .
Relationship Data:
Dependent or Beneficiary .
Relationship . . . . .
Dep/Ben Type . . . . .
Percent Allocated. . . . .
Dependent/Beneficiary Data:
Social Security Number . .
Date Of Birth. . . . .
Dep/Ben Status . . . . .
Memo/Address Info. . . . .
F5=D/B Relationships      F21=Print      F24=More Keys

```

Spacing

Use the following as your standards when spacing different screen elements:

Figure 18–20 Standards for Spacing Screen Elements

```

O . . . . Dependent / Beneficiary . . . . Plan D DB % S Effect.
P Number Name ID B Rel Ty Alloc. T From
- - - - -
- - - - -

```

- Separate column headings with one space.

Figure 18–21 An Example of Separating Columns

```

Dependent or Beneficiary . -
Relationship . . . . . -
Dep/Ben Type . . . . . -
Percent Allocated. . . . .

```

- End row descriptions with at least one period followed by a single space before you begin associated input fields.

Figure 18–22 Ending Row Descriptions

```

08335                      Benefits by Employee      Year . . . . 20
                                           Type of Year 5
Employee . . . . 6001    Allen, Raymond             Dates:
Soc Sec No . 798-52-5841                               Birth. . . . 10/20/58
Benefit Grp.                                           Orig. Hire . 12/15/88
Business Unit      9 An Energy Deleted Interest       Started. . . 12/15/88
                                           Terminated .
0
P      Plan Name                . . Effective. . . Contributions .
      . . . . . From Through . . . Employee Employer
- Dependent Care Reimb. Account
  Plan ID: DEPCARE Provider/Trustee: Edwards, J. D.
- Life Insurance           01/01/90 12/31/90
  Plan ID: LIFE   Provider/Trustee: State Mutual Insurance Company

```

- Indent Fold Area fields one or more spaces to offset them from regular subfile.

Figure 18–23 Indenting Fold Areas

```

0
P      Plan Name                . . Effective. . . Contributions .
      . . . . . From Through . . . Employee Employer
- Dependent Care Reimb. Account
  Plan ID: DEPCARE Provider/Trustee: Edwards, J. D.
- Life Insurance           01/01/90 12/31/90
  Plan ID: LIFE   Provider/Trustee: State Mutual Insurance Company

```

- Use two or more spaces to separate Fold Area data fields from row descriptions that follow on the same line. End Fold Area row descriptions with a colon instead of periods to aid legibility.

Figure 18–24 Ending Fold Area Row Descriptions

```

Benefit Grp.                      Started. . .
Business Unit                     Terminated .
0
P      Plan Name                . . Effective. . . Contributions .
      . . . . . From Through . . . Employee Employer

```

- Insert a blank line between header and subfile information.

Figure 18–25 *Separating the Header and Subfile Rows*

069116	Pay Type Specifications
Action Code.	

- When possible, insert a blank line between the title and first field. Begin fields on line 3 unless you need to use the upper right corner of line 1 and 2.

18.15 Adding Screen Fields Using Pick List

To add screen fields

From the SDA screen:

1. Access the Records Formats List using the F10 key.
2. Complete the Record Formats List screen.
3. Press F10 to display the Record Formats List.

Figure 18–26 *Record Formats List screen*

[illegible]

Use this screen to select database fields and maintain record formats, record types, fast path files, and record format keywords.

Field	Explanation
Opt	<p>Enter the appropriate number to indicate you want to select one of the following values:</p> <ul style="list-style-type: none"> ■ File/field pick list for ampersand functions. ■ File/field pick list for fast path functions. ■ List of defined fields in the format. ■ Delete format. ■ Record format keywords.

Field	Explanation
Format Name	<p>Screen record format.</p> <p>The format name will be the screen ID followed by a specific suffix value. Typically, the suffix values are:</p> <ul style="list-style-type: none"> ■ subfile control format ■ subfile format ■ record format <p>If additional formats are required, each format name must be unique so new format suffix values must be assigned.</p>
Type	Record format type. See types listed below.
Fast Path File	The database file you want to select fields from.
Start/End Lines	Specifies the line number range of the format.
Related Record	Field that ties a subfile to a control record format. Required in all SFLCTL record formats.
# Fields Selected	The number of database fields that have been selected for use on the format.
Fld Pfx	Screen field prefix to be used for the screen fields: VD, SF.

18.15.1 About Record Formats

Several Record Format Types are valid for screens. Currently, they include:

- SFLCTL - Subfile control

Figure 18–27 Subfile Control Record Type

```
928200                                Item Search
```

Business Unit. XXXXXXXXXX OOOOOOOOOOOOOOOOOOOOOOOOOOOO

O	Item		Ship	
P	Number	Description	Date	Quantity On Hand UM

Present in all subfile screens. Contains all of the fields in the header or top portion of the screen, including the subfile column headings.

- SFL - Subfile

Figure 18–28 Subfile Record Type

[illegible]

Contains all the fields in the subfile portion of the screen, including the fold area (if applicable).

- RECORD

Present in all screens. In subfile screens, contains VDL24 (line 24 text). In non-subfile screens, can contain all fields on the screen, including VDL24.

- SFLMSG - Subfile Message

Displays error message text. JD Edwards World does not use this format because errors are handled through RPG programs.

18.16 Selecting Database Fields

There are two methods of selecting database fields for placement on the screen:

- With Fast Path
- With the File Selection List

Method	Description
Fast Path	Type 1 next to the format on which you want to place the fields and enter a file name under the Fast Path File column.
File Selection List	Type 1 next to the format on which you want to place the fields but do not enter a file name. Accesses a file selection screen where you can specify multiple files and libraries from which to select database fields.

To select a database field using Fast Path

1. On the Record Formats List screen, enter a Fast Path File for the specified format.
2. For database field selection, choose option 1.

Figure 18–29 *Record Formats List screen*

[illegible]

The Field Selection List displays.

Figure 18-30 Field Selection List screen

92524		Field Selection List				Format: V928200C			
Report: V928200									
Seq									
No	Field Name	Description	DT	Size	HDG	D	Use		
---	QXXIT K01	Item ID.	S	8	0	---	---		
---	QXXDS	Description	A	30	---	---	---		
---	QXXTY	Item Type.	A	2	---	---	---		
---	QXXDT	Date Last Ship	S	6	0	---	---		
---	QXXCC	Business Unit.	A	12	---	---	---		
---	QXXQT	Quantity On Hand	S	15	0	---	---		
---	QXXUM	Unit of Measure.	A	2	---	---	---		
---	QXX001	Item Code 001.	A	3	---	---	---		
---	QXX002	Item Code 002.	A	3	---	---	---		
---	QXX003	Item Code 003.	A	3	---	---	---		
---	QXX004	Item Code 004.	A	3	---	---	---		
---	QXX005	Item Code 005.	A	3	---	---	---		
F3=Exit F12=Prev Screen F21=Select All									

- Press F21 to select all the fields for the file instead of selecting them individually.

Based on the record format for which you are using the Field Selection List, the following information is the default:

- For a subfile control record format, the HDG field will default to R for the type of heading and the Use field will default to B for input/output.
- For a subfile record format, the HDG field will default to D for the type of heading and the Use field will default to B for input/output.
- For a non-subfile screen, the HDG field will default to R for the type of heading and the Use field will default to B for input/output.
- For a report, the HDG field will default to D for the type of heading and the Use field will default to O for output.

Field	Explanation
Seq No	Sequence Number to indicate which data items you want on the screen you are creating and what order you want them to be displayed in the Pick List window accessed from SDA.
Field Name	The name given to a field for a screen, report, or database table. If the field is a key field in the file, K01, K02, etc will be displayed.
Description	The Data Dictionary row description.
Data Item Type	The type of data. The data item types are defined in User Defined Codes, system code '98', record type 'DT'.
Data Item Size	The field size of the data item. Note: All amount fields should be entered as 15 bytes, 0 decimals, and the data item type should be P (packed).
HDG	Which heading to use from the Data Dictionary. <ul style="list-style-type: none"> Row Description (R) Column 1 heading (C) Column 1 and 2 heading (D)
D	Used to indicate whether a 30 character VC field should be included for constant information.

Figure 18–33 Field Selection List screen

92524		Field Selection List					Format: V928200C				
Screen: V928200											
Seq											
No.	Field Name	Description				DT	Size	HDG	D	Use	
---	QXXIT K01	Item ID.	.	.	.	S	8	0	-	-	-
---	QXXDS	Description	.	.	.	A	30	-	-	-	-
---	QXXTY	Item Type	.	.	.	A	2	-	-	-	-
---	QXXDT	Date Last Ship	.	.	.	S	6	0	-	-	-
---	QXXCC	Business Unit	.	.	.	A	12	-	-	-	-
---	QXXQT	Quantity On Hand	.	.	.	S	15	0	-	-	-
---	QXXUM	Unit of Measure	.	.	.	A	2	-	-	-	-
---	QXX001	Category Code 001	.	.	.	A	3	-	-	-	-
---	QXX002	Category Code 002	.	.	.	A	3	-	-	-	-
---	QXX003	Category Code 003	.	.	.	A	3	-	-	-	-
---	QXX004	Category Code 004	.	.	.	A	3	-	-	-	-
---	QXX005	Category Code 005	.	.	.	A	3	-	-	-	-
F3-Exit F12-Prev Screen F21-Select All											

3. Select fields using the same techniques as in the Fast Path method.

Note: If you select a key field, that field is edited as the key of the screen. An edit indicator of 41 is assigned.

18.17 Placing Fields on a Screen Using a Pick List

To place fields on a screen using a Pick List

On the Item Master Information screen

Figure 18–34 Item Master Information screen

928011

Item Master Information

Action Code. . . . B

A

A

Screen: V928200

Field Selection List

Format: V928200C

Seq Fields to select

Row Deac Length. . . 10

No	Field Name	Description	DT	Size	HDG	D	Use
1	QXXIT 01	Item ID.	S	8	0	E	B
2	QXXCC	Business Unit.	A	12	—	E	B
			—	—	—	—	—
			—	—	—	—	—
			—	—	—	—	—
			—	—	—	—	—

F3=Exit F10=Formats F12=Prev Screen F16=Field List

1. Type either one or more ampersands (&) on the SDA screen where you want to place the fields from the pick list you created.
If you place more than one &, make sure that you allow room for all of the fields that are returned to the screen, so that you do not overlap fields.
2. On the Field Selection screen, verify the information that is on the screen (VTX field - HDG, 30-character description - D, and field Use - USE), as well as the order that they will be brought back (the sequence number), and row description length.
3. To add a Fold Area to a subfile, place an asterisk (*) or ampersand (&) on the second line in the subfile format of your screen. If you need a second line in the

Fold Area, you can place an asterisk (*) or ampersand (&) on the third line of the subfile format. HDG should be "R" when adding fields to the fold.

18.18 Function Key Exits from Screen Design Aid

Function	Description
F2	Access a command line to enter a JD Edwards World or IBM command without having to exit to Command Entry or a menu. If you are secured out of Command Entry or Menu Traveling, you still get this command line, but you cannot execute commands or menu travel.
F5	Shows the Format Display Control window.

Example F5 - Format Display Control window.

Figure 18–35 *Format Display Control* portion of the Item Search screen

[illegible]

The following table provides an explanation of the fields in the Format Display Control window.

Field	Explanation
Selection	Controls the display of record formats. 1 – Format is displayed. Blank – Format is not to be displayed.
Format	Lists the DDS format names for the screen screen. All names begin with Screen name <ul style="list-style-type: none"> Subfile control formats end with C. Subfile formats end with S. Record (non-subfile) formats end with 1.
Type	Describes the format type.
Boundaries	Two 3-digit numbers that define the range (rows) for the DDS.
Window	Allows access to fields outside the boundaries.

Field	Explanation
Browse (Y/N)	Allows user to enable/disable the browse mode and view the screen as it would appear when executed. <ul style="list-style-type: none"> Cannot change or access any item while in browse mode.

Function	Description
F4	Provides the following: <ul style="list-style-type: none"> Toggle between displaying the Fold Area or not for a subfile screen. Must set Browse (Y) in Format Display Control Window (F5).
F6	This screen provides access to other repository services within JD Edwards World.
F8	Provides the following: <ul style="list-style-type: none"> Will display your screen in monochrome or color. If accessing the Field Definition window, will toggle between Condition Indicators and Color Attributes.
F10	Displays the Format Keyword Maintenance screen.

Example F10 - Format Keyword Maintenance screen

Figure 18–36 *Format Keyword Maintenance screen*

```

92537          Format Keyword Maint          Format: V928200C
Screen: V928200

      General Keywords
PUTOVR (Y/N) . . . . . N
OVERLAY (Y/N) . . . . . Y
-----
      Subfile Keywords
Subfile Fold . . . . . Y
Type (A/F) . . . . . F
Subfile Clear. . . . . Y
Subfile Next Change. . . . Y
Subfile Page . . . . . 8
Subfile Size . . . . . 20

```

Field	Explanation
PUTOVR (Y/N)	The screen record format uses the PUTOVR keyword. Causes the screen to be erased and redisplayed when a window is displayed.
OVERLAY (Y/N)	The screen record format uses the OVERLAY keyword. Will not erase and redisplay screen when a window is displayed. Most JD Edwards World screens use OVERLAY.
Subfile Fold	Create a fold area in the subfile using SFLDROP and SFLFOLD keywords.

Field	Explanation
Type (A/F)	Further identifies subfile fold area: A – Will lose modified data in the subfile when you press F4. F – Data is retained.
Subfile Clear	This option specifies if you want to use SFLCLR or SFLINZ. The default is SFLCLR. This option is ignored when designing non-subfile screens. Y – means you want SFLCLR N – will give you SFLINZ
Subfile Next Change	Whether or not to use SFLNXTCHG (Y/N). Will require the user to correct any errors in the subfile before further execution of the program.
Subfile Page	Identifies the number of records on one subfile page, with the fold area open, if applicable. <ul style="list-style-type: none"> 1 to 27 inclusive (Number of lines in SFL area divided by number of lines in fold.)
Subfile Size	Identifies the total number of records in the subfile that will be loaded in one program cycle. <ul style="list-style-type: none"> 1 to 9999 inclusive

Function	Description
F13	Displays the Function Key/Opt Definition screen. <ul style="list-style-type: none"> Used to define the function keys for the screen. Function Key Definition files (F9601 and F9611).

Example F13 Function Key/Opt Definition screen

Figure 18–37 Function Key/Opt Definition screen

```

9601                      Function Key/Opt Definition
Action Code . . . I      Video Screen . . . V928200
                          Video Title . . . Item Search
Line 24
  Opt:1=Item Master Information   F5=Item Maintenance   F24=More Keys

Include  Description                      Key/Opt  Field
Y       Exit Program                      03       #PEOJ
Y       Clear Screen                      22       #PCLR
Y       Help Instructions                  HL       #FHELP
Y       Roll Up/Next Record               RU       #FROLU
Y       Roll Down/Previous Record         RD       #FROLD
Y       Field Sensitive Help              01       #FCMRK
Y       Display Error Message(s)          07       #FERRD
Y       Display All Function Keys         24       #FKEYS
Y       Item Maintenance                  05       #F01
Y       Item Master Information            01       #S01

Include: Y/N                      F16=Display All

```

Field	Explanation
Action Code	One character field used to indicate the action that the user wants to take on the record requested. Inquire on a record before you attempt to change it.

Field	Explanation
Screen Screen	The name of the screen or report record to be copied. All records for soft coding will be displayed.
Screen Title	The vocabulary overrides title used on screens and reports. On screens, the title is retrieved from the Menu file. If a record is not found, then the title is retrieved from the Vocabulary Overrides file. Report titles are retrieved from the DREAM Writer Version ID (F98301).
Include	Whether or not to include the function or option key on the screen.
Description	Describes the function or option exit. Cannot exceed 40 characters.
Key/Opt	Identifies the function key number or option. Special values: <ul style="list-style-type: none"> ■ Helps. ■ Roll Up. ■ Roll Down.
Field	Identifies the name of the function or option exit. Values always begin with a # (pound sign).

Function	Description
F14	<p>Displays the Indicator Control portion of a simulated program execution screen.</p> <ul style="list-style-type: none"> ■ Used with the Browse mode to simulate a screen at program execution. ■ Desired indicators can be set on/off to test field conditioning.

Figure 18–38 Example F14 - Indicator Control Portion of a Simulated Program Execution screen

```

928200                               Item Search
-----Indicator-Control-----
Business Unit                        000000000

      1 2 3 4 5 6 7 8 9
O Item          1 0 0 0 0 0 0 0 0 0 0
P Number       11 0 0 0 0 0 0 0 0 0 0
R 00000000 00 21 0 0 0 0 0 0 0 0 0 0
   Code 1 . 00 31 0 0 0 0 0 0 0 0 0 0
R 00000000 00 41 0 0 0 0 0 0 0 0 0 0
   Code 1 . 00 51 0 0 0 0 0 0 0 0 0 0
R 00000000 00 61 0 0 0 0 0 0 0 0 0 0
   Code 1 . 00 71 0 0 0 0 0 0 0 0 0 0
R 00000000 00 81 0 0 0 0 0 0 0 0 0 0
   Code 1 . 00 91 0 0 0 0 0 0 0 0 0 0
R 00000000 00
   Code 1 . 00 Ignore all conditioning - (Y/N)
R 00000000 00 Reset all indicators - (I/O)
   Code 1 . 00 ----F3=Exit---F12=Prev-Screen----
R 00000000 00000000000000000000000000 000000000000000000000000
   Code 1 . 000 Code 2 . 000 Code 3 . 000 Code 4 . 000 Code 5 . 000
R 00000000 00000000000000000000000000 0000000000000000000000
   Code 1 . 000 Code 2 . 000 Code 3 . 000 Code 4 . 000 Code 5 . 000

Opt:l=Item Master Information      F5=Item Maintenance      F24=More Keys

```

Function	Description
F16	<p>Displays the List of Defined Fields screen.</p> <ul style="list-style-type: none"> Used to maintain the defined fields and add hidden fields. Only shows fields for the formats that are active.

Figure 18–39 Example F16 - List of Defined Fields screen

92540		List of Defined Fields				
Screen: V92801						
Opt	Fmt/Field	Description	Row/Col	Typ	Size	Use
-	VTX007	Item	006 013	A	30	O
-	VTX009	Quantity	006 044	A	21	O
-	VTX011	Ship	006 066	A	8	O
-	VTX003	P	007 002	A	1	O
-	VTX006	Number	007 004	A	8	O
-	VTX008	Description	007 013	A	30	O
-	VTX010	On Hand	007 044	A	21	O
-	VTX012	Date	007 066	A	8	O
-	V92801S	Record Format	SPL			
-	SHXIT	Item ID - Hidden Field	000 000	A	8	H
-	SPSELC	Selection Exits	008 002	A	1	B
-	SPXIT	Item ID	008 004	A	8	B
-	SPXDS	Description	008 013	A	30	B
-	SPXQT	Quantity On Hand	008 044	A	21	B

Opt: 4=Delete 5=Display/Update F3=Exit F12=Prev Screen

18.18.1 Hidden Fields

Used to store hidden field information.

To add a hidden field to a screen

1. Roll to the bottom blank line of the format that contains the field.
2. Choose option 5, Display/Update.
3. Enter the field with a prefix of SH, description, type, size, and press Enter.

This information should be the same as the associated database field.

Option 5 - Select Field Definition

Figure 18–40 Option 5 - Select Field Definition screen

```

928200                                Item Search

*Business Unit.  BBBBBBBBBBBB  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOO

O   Item                               Ship
P Number      Description              Date    Quantity On Hand UM
R OOOOOOOOOO  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO  OOOOOOOOOO  OOOOOOOOOOOOOOOOOOOOOOO  OO
Code 1 . 000 Code 2 . 000 Code 3 . 000 Code 4 . 000 Code 5 . 000
R OOOOOOOOOO  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO  OOOOOOOOOO  OOOOOOOOOOOOOOOOOOOOOOO  OO
Code 1 . 000 Code 2 . 000 Code 3 . 000 Code 4 . 000 Code 5 . 000
R OOOOOOOOOO  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO  OOOOOOOOOO  OOOOOOOOOOOOOOOOOOOOOOO  OO
Code 1 . 000 Code 2 . 000 Code 3 . 000 Code 4 . 000 Code 5 . 000
R OOOOOOOOOO  OOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOOO  OOOOOOOOOO  OOOOOOOOOOOOOOOOOOOOOOO  OO
Code 1 . 000 Code 2 . 000 Code 3 . 000 Code 4 . 000 Code 5 . 000
Screen:V928200-----Field-Definition-----Format:-V928200C-
Dict Name     XCC          Text       Business Unit
Data Type     A           Field Name VTX004          Cond Ind
Row/Column    _3_  _2_     Field Use  Q                RI - - - - -
Size         _14_        Text Form  R                HI - - - - -
Dft Cursor    -           Edited      -                UL - - - - -
Lower Case    -           Change      -                ND - - - - -
OVRDTA        -           Duplicate   -                BL - - - - -
OVRATR        -           Field Cond - - - - -        PR - - - - -
                                           PC - - - - -

F3=Exit F12=Prev-Screen F17=Dictionary

```

Accesses the Field Definition screen, just as if you had entered an asterisk (*) for the field.

Function	Description
F17	<p>Used to define soft coding (Vocabulary Override) fields.</p> <ul style="list-style-type: none"> To define VTX fields other than row and column headings on the screen. This is used to create a VTX field which stores a message which the application program uses for display purposes on a screen or report. You can specify the literal text that will be loaded into a *VC0 field. You must save your screen at least once in order to be able to update vocabulary overrides and/or function key definitions by this method. This is because when you are first defining a screen, the vocabulary override record and function key definition record are not created until you save the screen. <p>Note: After changing the size of a VTX field, you should execute the Rebuild Vocabulary Override Field Lengths program (11/G9642). This displays the correct VTX field lengths in the Field Size field in Vocabulary Overrides.</p>

Figure 18-41 Example F17 - Define Soft Coding Fields screen

Function	Description
F19	<p>Used to window left.</p> <p>Note: This function key is applicable only when designing wide screens (132 by 27 rows) on 80 column terminal.</p>
F20	<p>Used to window right.</p> <p>Note: This function key is applicable only when designing wide screens (132 by 27 rows) on 80 column terminal.</p>

18.19 Changing Subfile Boundaries

Be careful when changing the size of a subfile through SDA. Consider using these processes to make such changes easier and less confusing.

To make a subfile smaller

- To access the Record Formats List screen, press F10.

2. Change the starting line number for the subfile form at (VxxxxxS).
3. To return to SDA, press Enter.
4. To access the Record Formats List screen again, press F10.
5. Change the ending line number for the control format (VxxxxxC).
6. To return to SDA, press Enter.
7. Move or add headings.

To make a subfile larger

You can reverse the above steps if you want to make the subfile larger. You must move the control format fields up before changing the starting line number for the subfile format.

1. Move headings.
2. To access the Record Formats List screen, press F10.
3. Change the ending line number for the control format (VxxxxxC).
4. To return to SDA, press Enter.
5. To access the Record Formats List screen again, press F10.
6. Change the starting line number for the subfile format (VxxxxxS).
7. To return to SDA, press Enter.
8. In SDA, press F10 to alter the format.
9. Enter 5 on the control format field.
10. Change subfile page size, as needed.

Note: When you change the subfile, you must change the subfile page and subfile size to correctly reflect the size of the new subfile.

18.20 Process Overview - Placing Selected Fields

Once you have established your field pick list, use the ampersand (&) to specify where you want to locate the field.

Figure 18–42 *Ampersand in the Item Master Information screen*

The screenshot shows a terminal window titled "Item Master Information". The first line displays "928011". The second line shows "Action Code. . . &". The third line shows "&". The fourth line shows "&".

The ampersand (&) calls up the pick list in the Field Selection screen where you can order the fields and further define their specifications.

Figure 18–43 *Field Selection List screen*

```
Screen: V928200          Field Selection List          Format: V928200C
```

Seq	Fields to select		Row	Desc Length.	.	10
No	Field Name	Description	D/T	Size	Hdg	R Use
1	OxSxit_01	Item ID.....	S	8	0	B B
2	OxSxCC	Business Unit.....	A	12	E	D R
			-		-	- -
			-		-	- -
			-		-	- -
			-		-	- -
			-		-	- -
F3-Exit	F10-Format	F12-Prev Screen	F16-Field List			

18.20.1 Options

The following options are available:

- Override Row Description length
- Resequencing fields in list
- Select headings (Row, Column headings) *VTX
- Description Field (*VC0)
- Usage (O=Output, B=Both Input and Output)

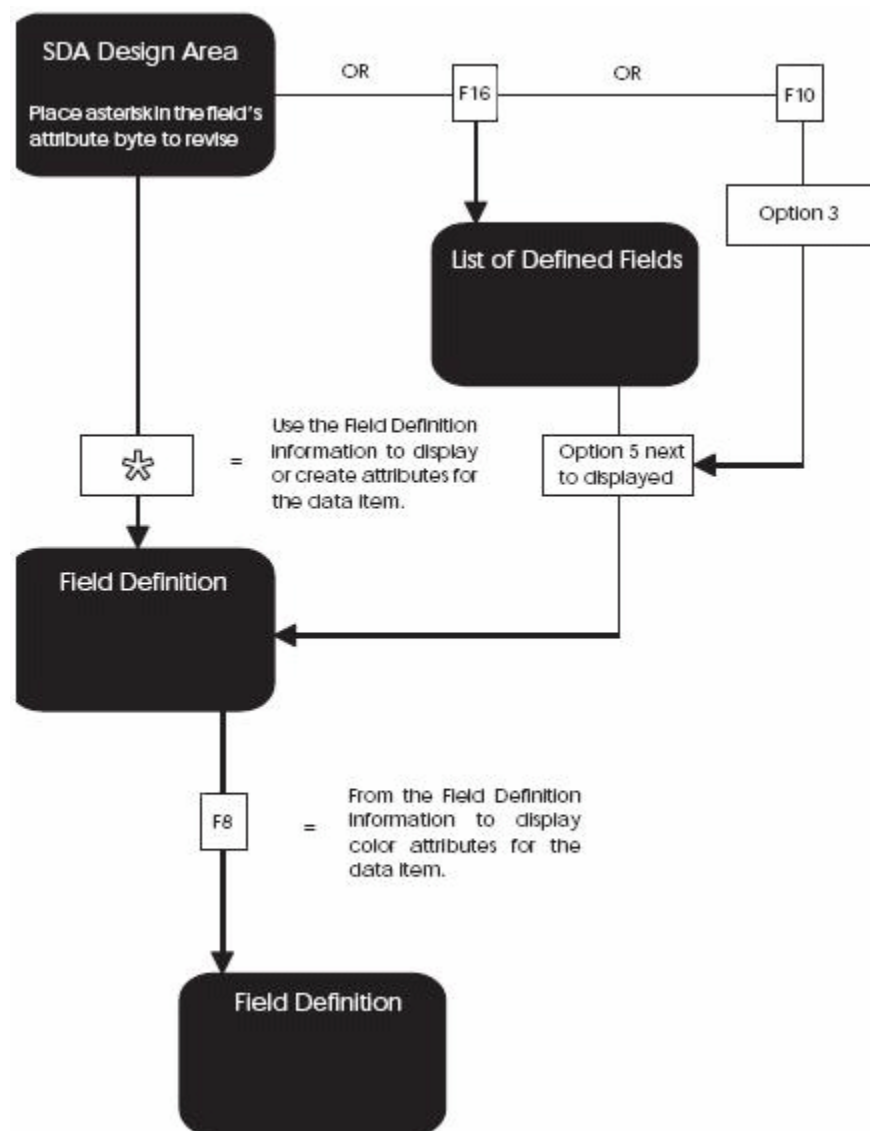
After you have sequenced the fields, they are retrieved from the file and placed on the design area.

Figure 18–44 Design Area Showing Field Selection List

[illegible]

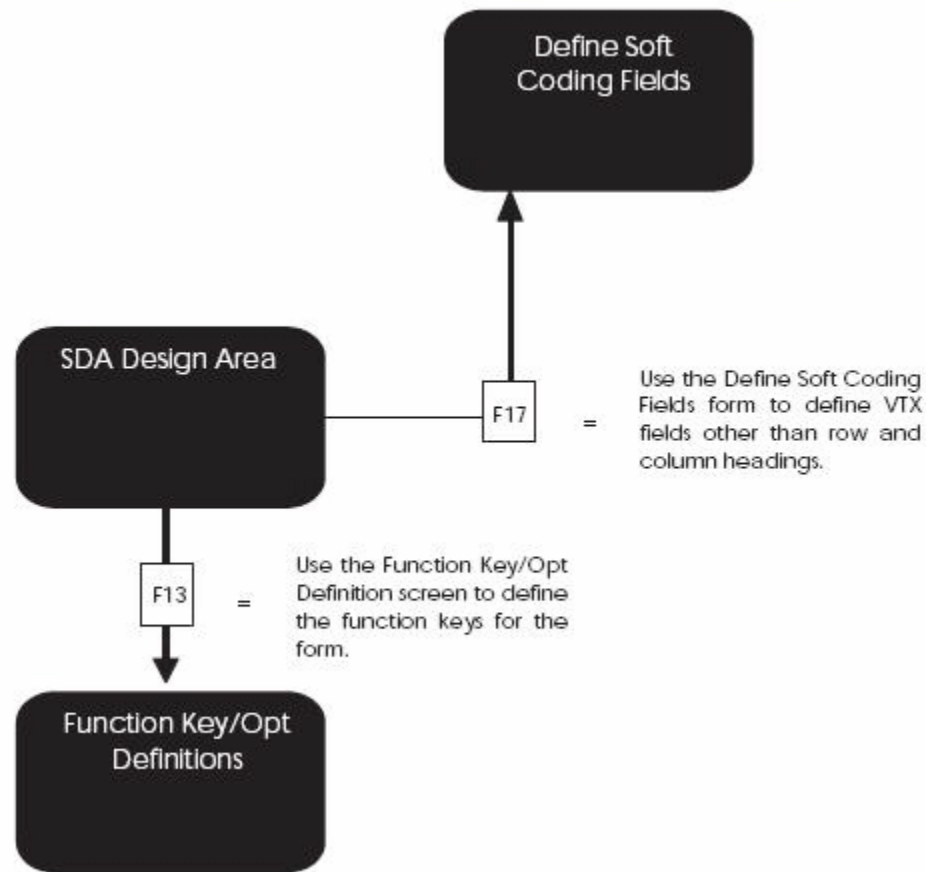
18.21 Process Overview - Revising the Field Definition

Figure 18-45 Process Flow to Revise the Field Definition



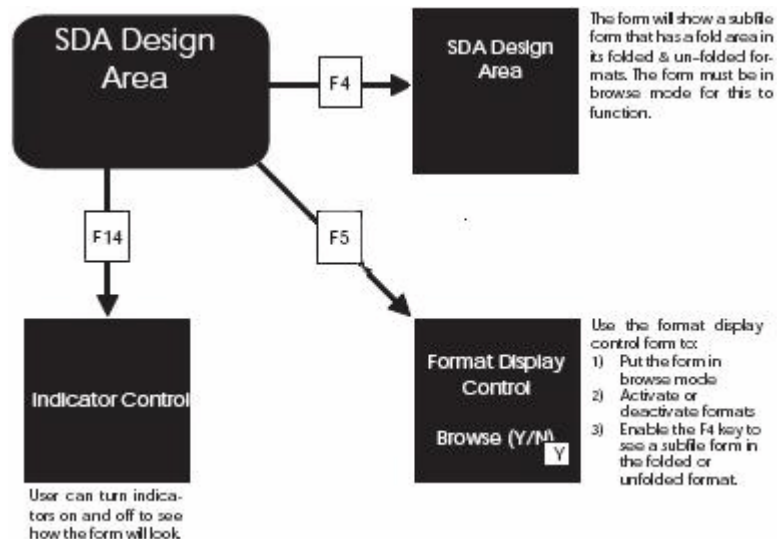
18.22 Process Overview - Revising Vocabulary and Function Keys

Figure 18-46 Process Flow to Revise the Vocabulary and Function Keys



18.23 Function Keys for Screen and Display Format Control

Figure 18-47 Function Keys for Screen and Display Format Control



18.24 Summary of Screen Design Aid

Editing options:

- d, *DEL
- <<, >>
- 'xx...xx'
- -, =
- --, =
- * and &

You should not use the INSERT and DELETE keys while in SDA.

F7 restores a screen if you accidentally press Field Exit.

Standard prefixes:

- VD, SF, SH

Special Fields:

- *VTX, *VC0, *LITER, *DATE, *TIME
- ACTION
- VDL24
- TTL@

Error indicators 40 to 79 are automatically assigned to VD and SF fields that are defined as input or input/output.

Update fields by using *.

You have two methods of adding fields to a screen:

- * (non-pick list method)
- & (pick list method)

You can pull in VTX, VC, and the screen database fields all at the same time for one database field.

You have two methods of selecting database fields:

- Fast Path
- Non-Fast Path - Accesses File Selection screen

If you are changing subfile boundaries, you should use the outlined processes to make this process easier.

You must save a screen at least once before updating vocabulary overrides or Function Key Definitions because the exit from SDA creates these records.

You add hidden fields from the List of Defined Fields screen, which you access by pressing F16 from SDA:

- You add hidden fields one at a time.
- You must enter a selection exit 5 to actually add the field.

Work with Report Design Aid

This chapter contains these topics:

- [Section 19.1, "About Report Design Aid"](#)
- [Section 19.2, "Accessing Report Design Aid"](#)
- [Section 19.3, "Updating a Field in RDA"](#)
- [Section 19.4, "Compiling A Report"](#)
- [Section 19.5, "Changing the Compile Option Defaults for Reports"](#)

19.1 About Report Design Aid

Report Design Aid (RDA) is a powerful and versatile tool for designing reports.

It uses the same process as the Screen Design Aid (SDA), except:

- It extends to column 227
- It has windowing capability

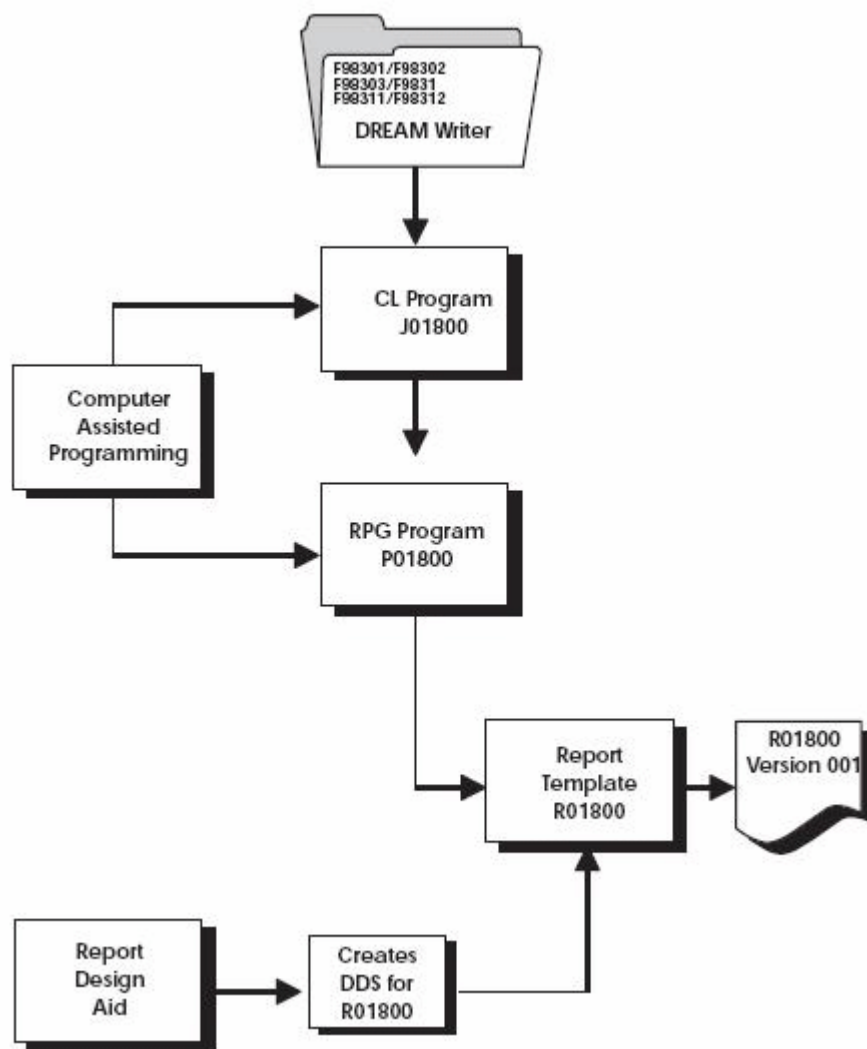
You need to identify only field names, field lengths, and field positions on the report.

JD Edwards World reports are externally defined, which means that all the Data Description Specifications are created and compiled as a printer file, separate from the program object. RDA automatically generates the DDS. It also incorporates the report information into the documentation and adds it to the cross reference facilities. You can print illustrations of each report.

RDA differs from SDA in that its parameters are targeted for print-based output, which includes page skipping, line skipping, and relative positioning.

19.1.1 Example - RDA and DREAM Writer

Figure 19-1 RDA and DREAM Writer Process Flows



19.1.2 Comparing RDA and SDA - Field Definition Form

Figure 19-2 SDA Field Definition Form

Screen: V5501Z-----Field Definition-----Format: V5501ZS	
Dict Name	SXDS
Data Type	A
Row/Column	8 11
Size	
Dft Cursor	
Lower Case	X
OVRDTA	
OVRATR	
Field Name	SPSXDS
Field Use	B
Text Form	
Edited	X 44
Change	
Duplicate	
Field Cond	
	Cond Ind
RI	X 44
HI	X 44
UL	X N44
ND	
BL	
PR	
PC	

--F3=Exit F12=Prev Screen F17=Dictionary-----

Figure 19–3 RDA Field Definition Form

```

Report:R55400X-----Field-Definition-----Format:-DETAIL1--
Dict Name  SXDS      Text      Description
Data Type  A         Field Name  RRSXDS      Cond Ind
Row/Column  9  89     Field Use  0         Highlight
Size       12       Text Form  -         Underline
          Lines Cond Ind      Field Cond
Space Before      Char per Inch
Space After      Edit Code
Skip Before      Asterisk Fill
Skip After      Float Symbol
--F3=Exit  F12=Prev-Screen  F17=Dictionary-----

```

Item	FIELD POSITIONING	FIELD CONDITIONING
RDA	Row positions are relative to the other rows, not fixed. The location on the report is determined by Space and Skip designations. Column positions are fixed.	A field can optionally appear bold, underlined, and so forth. JD Edwards World does not typically use these features because they impact printer performance.
SDA	Both row and column positions are fixed. A field displays on the screen exactly where the Row and Column indicators specify.	A field can appear highlighted, underlined, in reverse image, and so forth JD Edwards World makes use of these attributes for marking fields in error.

19.1.3 Cover Page Fields

The figure below shows the fields used on the cover page of a report. These fields would indicate your company in a production environment.

Figure 19-4 Cover Page Fields

```

graph TD
    VC0CO[VC0CO] --> SJD[S.D. Edwards and /company]
    SJD --> Vendor[Vendor Listing]
    Vendor --> CO[Colorado Only]
    CO --> OLP[One line per Address]
    OLP --> TXT2[TXT2]
    OLP --> TTL[TTL@]
    OLP --> TXT3[TXT3]
    
```

Program ID . . . P01301
Version. . . . 048

Report Date . . . 08/10/96
Report Time . . . 12:07:56

The Following Version Options Were Selected:

Print Cover Page (Y/N)	Y
Print Instructions (Y/N)	N

The Following Form Options Were Selected:

Form Type	
Maximum Form Width	
Maximum Form Length	

The following table provides the field names and a description of each.

Field	Explanation
VC0CO	Name of company 00000
TTL@	Line 1 of DREAM Writer Version ID if it exists, otherwise it is blank
TXT2	Line 2 of DREAM Writer Version ID, or blank
TXT3	Line 3 of DREAM Writer Version ID, or blank

19.1.4 Report Header Fields

The figure below shows the fields used on the report header. These fields would indicate your company in a production environment.

Figure 19–5 Report Header Fields

Address Number	Name	Phone Number	Line2	Line3	ST	Postal Code
4008	Allied Steel	779-1475	Attn: Andrew Carnegie	4949 E. Syracuse Hwy	CO	80112
4005	American General Insurance Co.	(303) 522-7575	1717 Chamber St.	Denver	CO	80182
4004	American Supply Company	(303) 321-5648	2658 Sherman Street	Denver	CO	80131
5004	Apple Hotel	(303) 773-3733	1234 Nancy Road	Englewood	CO	80137
1113	Arapahoe Hospital	773-7355	1476 Arapahoe Road	Englewood	CO	80111
4003	Arapahoe Plumbing	(303) 798-1515	c/o Phillips, Anderson	25 DTC Center	CO	80121
1759	Atty, Arnold	(303) 643-4132x1611	4329 S. Adams Street	Denver	CO	80121
4976	August, Roda	(787) 486-2245	94 Rue de Balzac	Paris	CO	80121
7018	Bank of America		80. St. Louis	Denver	CO	80327
7211	Bovaird, Georgia	(303) 733-5546	707 Vine Street	Denver	CO	80189

The following table provides the field names and a description of each.

Field	Explanation
VCOCO	Name of company 00000
RRTTL@	Default Title from Vocabulary Override
RRTXT2	Line 2 of DREAM Writer Version ID, or blank
RRTXT3	Line 3 of DREAM Writer Version ID, or blank

19.1.5 What Are the Report Formats?

The first step in designing a new report is determining the format of the report. You should account for all lines of information on the report to correctly define the formats needed and their size.

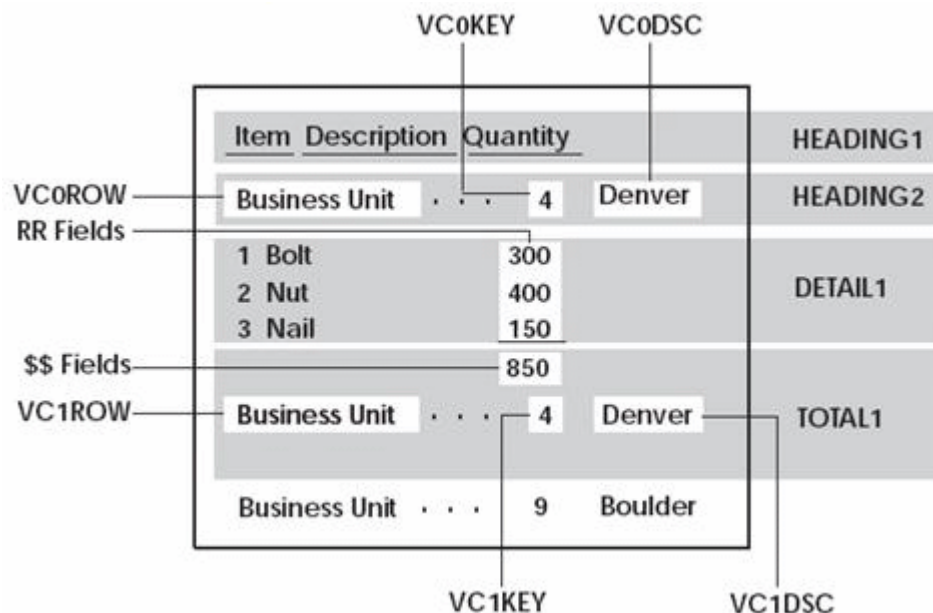
FORMAT	FIELD	DESCRIPTION
Any format	*VTX	Assigns the first available VTX name to the field and gets a description from the Data Dictionary that you can change.
	*VC0	Assigns the first available VC0 field and assigns a default size of thirty.
HEADING1 - contains the standard fields to be printed on the top of every page	VTX001	The default VTX field which prints the row description, "Page -."
	*PAGE	The default special field that inserts the DDS keyword PAGNBR in the source and retrieves the current page number on the report.
	VTX002	The default VTX field which prints the row description, "Date -".
	*DATE	Special field that retrieves today's date.
	VCOCO	The name of the default company 000, it displays on the first line of each page.
	RRTTL@	Default Title from Vocabulary Overrides.
	RRTXT2 & RRTXT3	DREAM Writer overrides that correspond to the second and third header lines of the report.

FORMAT	FIELD	DESCRIPTION
HEADING2 - contains the subheading fields used to describe the level break detail that is to follow	VC0ROW	Data Dictionary row description of the level break field.
	VC0KEY	The value of the level break field.
	VC0DSC	The description of the value of the level break field.
DETAIL1 - contains the data line fields	RRxxxx	The value of the data for these fields
TOTAL1 - contains the total line fields	VC1ROW	Data Dictionary row description of the level break field.
	VC1KEY	The value of the level break field
	VC1DSC	The description of the level break field
	\$\$XXX	Value on total line.

Note: You can have as many formats as you can fit on one RDA form. Just remember to increment the suffix number for each format added as well as any VC fields you may be using.

Certain fields are used in RDA when generating reports that contain subheadings or dynamic (hierarchical) totaling. The following illustrates how these fields are used within a report.

Figure 19-6 How Fields are Used Within a Report



19.1.6 What Are the Report Design Standards?

The following is a list of report design standards. Using these standards will give your reports a uniform appearance.

19.1.7 RDA Features

Some features of RDA are:

- Normal design range of 132 - 198 character reports
- Validates against the Data Dictionary
- Automatically adds records to the Vocabulary Overrides file

19.1.8 JD Edwards World Standards for Record Formats

Prefix standards:

- RR for output fields
- \$\$ for total fields

19.1.9 General Aesthetics

When possible, design your reports using the following set of rules:

Column Headings

Column headings should not be wider than the length of the data that appear below them.

Alignment

Begin fields in column space 2 and do not extend fields beyond column 132 unless necessary.

Spacing

Use the following as your guides when spacing different report elements:

- Separate column headings by one space
- Use both column headings when one heading is not clear enough

Special Effects

Some of the following recommendations can be ignored since most printers in use are not impact printers.

You should always use dashes below column headings instead of underlines.

Underlines can impact the performance of printers. You enter dashes as literal fields.

Do not use highlight as it prints a line three times to achieve the highlighted (or boldface) effect, again impacting performance.

Format

To avoid overflow, limit the number of lines in any detail or total format to six or less.

Line and Page Skipping

To be consistent with other report programs, use SPACEB and SKIPB instead of SPACEA and SKIPB.

19.1.10 About Designing the Report

DDS statements are being created as you design the report.

- SPACEB and SPACEA are entered and removed as you add and move fields around.
- Multiple formats are relative to each other.

Function	What to use
Changing the Report Title	TTL@
Adding a New Field	*, &
Updating Existing Fields	*
Deleting an Existing Field	*DEL on field definition form
Format Name	Displayed in upper right hand corner of form.
Field positions	Represent starting positions.

19.2 Accessing Report Design Aid

You must have access to the source file to enter RDA.

To access Report Design Aid

From Software Versions Repository

Figure 19–7 *Software Versions Repository screen*

```

9801                               Software Versions Repository

Action Code. . . . I
Member ID. . . . R228400
Description. . . Inventory by Cost Center w/o Subheadings
Function Code. . . PETE Printer Files
Function Use. . . 151 Simple Reports
System Code. . . 22 Computer Assisted Design
Reporting System 22 Computer Assisted Design
Base Member Name R228400 File Prefix. . .
Maint/RSTDSP. . . 1 Omit Option. . . S Generation Sev. .
Copy Data (Y/N). M Optional File. . M Common File. . M

O Source      Object      Source      SAR      Version      S D      User      Date
P Library     Library     File       Number   ID          C P      ID      Modified
  JDFSRC71    JDFOBJ71    JDBSRC     834451  A71        1 -     QUARLES  10/26/94
  _____  _____  _____  _____  _____  _____  _____  _____
  _____  _____  _____  _____  _____  _____  _____  _____
  _____  _____  _____  _____  _____  _____  _____  _____
  _____  _____  _____  _____  _____  _____  _____  _____
  _____  _____  _____  _____  _____  _____  _____  _____
  _____  _____  _____  _____  _____  _____  _____  _____
  _____  _____  _____  _____  _____  _____  _____  _____
  _____  _____  _____  _____  _____  _____  _____  _____
  _____  _____  _____  _____  _____  _____  _____  _____
  _____  _____  _____  _____  _____  _____  _____  _____
  _____  _____  _____  _____  _____  _____  _____  _____

Opt: 1=Browse 2=Edit 3=Copy 5=SAR 8=Print 9=Dlt 10=Design 14=Crt F24=More

```

1. Inquire on a report.
2. Copy the production source code down to a development environment.
3. Choose option 10 on the Software Versions Repository form to go to the appropriate Design Aid form based on the members Function Code value.
 - To go to Report Design Aid, enter "PRTF" or "PRTS" in the Function Code field.

19.3 Updating a Field in RDA

The field definition form in RDA is slightly different from SDA.

To update a field in RDA

From Software Versions Repository, choose the design option.

1. Enter "*" in the field you wish to update.

Figure 19–8 Asterisk in the Field to be Updated

```
928400                                Inventory by Business Unit
```

Business Unit	Description	It Ty	Description
*0000000000	00000000000000000000000000000000	C0	00000000000000000000000000000000

```
Report:R928400-----Field-Definition-----Format:-DETAIL1--  




  
---F3=Exit F12=Prev-Screen F17=Dictionary---
```

Field	Explanation
Space Before	Specifies the number of lines a printer device is to space before printing the next lines.
Space After	Specifies the number of lines a printer device is to space after printing the next lines.
Skip Before	Specifies that the printer device is to skip to a specific line number before it prints the next lines.
Skip After	Specifies that the printer device is to skip to a specific line after it prints the next lines.
Field Cond	Indicates whether the field conditioning (to print this field or not) is in effect.
Char per Inch	Specifies the horizontal printing density. JD Edwards World specifies this at the report level and this field is not used.
Edit Code	Used to specify output formatting of numeric data. Used in conjunction with *DATE, *TIME, *PAGE.
Asterisk Fill	Optionally specify asterisk fill for edit codes 1-4, A-D, and J-M. An asterisk will print for each zero suppressed in the edited field.
Float Symbol	Specify a currency symbol (corresponding to the system value QCURSYM) that will be printed immediately to the left of the left-most digit of an edited field. Valid for a numeric field that has an edit code of 1-4, A-D, or J-M.

19.3.1 Understanding the Report Design Aid Function Keys

Function Key	Description
F5	Shows the Format Display Control portion of a form.

Figure 19–9 Example F5 - Format Display Control

```

928400                                00000000000000000000000000000000
                                Inventory by Business Unit
                                00000000000000000000000000000000
                                00000000000000000000000000000000

Business Unit      Description
-----
00000000000000000000000000000000

It
----Format-Display-Control-----
Sel Format      Type      Boundaries
1  HEADING1    REPORT    001  008
1  DETAIL1     REPORT    009  009
1  TOTAL1     REPORT    010  011
-
-
-
Window:      Row 001 Col 001
Browse (Y/N) N   Form Width 132
Opt:1=Display-Fmt--F3=Exit-F12=Pre

```

Field	Explanation
Sel	Selection. Controls the display of record formats.
Format	Lists the DDS format names. Valid format names are: <ul style="list-style-type: none"> HEADINGn HEADINGn+1 DETAILn TOTAL1
Type	Describes the DDS format type. Always REPORT or SFORMS in RDA.
Boundaries	Two 3-digit numbers that define the range (rows) for the DDS. <ul style="list-style-type: none"> HEADING1 is usually rows 1 to 8 DETAIL1 is row 9 (Only one detail line is defined.) TOTAL1 is rows 10 to 11 (Leave one line for the dashes above the Total field.)
Window	Allows you to access fields outside the boundaries.
Browse (Y/N)	Indicator that allows you to enable/disable the browse mode.
Form Width	Width of the form in print positions.

Caution: RDA might automatically adjust displayed formats with those formats that are not displayed.

Function Key	Description
F6	Shows the Repository Services portion of a form.

Figure 19–10 Example F6 - the Repository Services portion

```

928400                                00000000000000000000000000000000
                                           Inventory by Business Unit
                                           00000000000000000000000000000000
                                           00000000000000000000000000000000

Business      Description              It        Description
Unit          -----                Ty         -----
0000000000    0000000000000000     985001----Repository-Services-----
               "1" Available Services
               - Data Dictionary
               - Menus
               - Vocabulary Overrides
               - Function Key Definitions
               - Processing Options
               - User Defined Codes
               - Edit System Helps
               - CASE Profiles
               - SAR Log Inquiry
               - Copy DD,VO,DW,UDC,S1,Menus
- Sel :--"1"--Select-----F12=Previous-----
```

Function Key	Description
F10	Displays the Record Formats List form.

Figure 19–11 Example F10 - the Record Formats List screen

[illegible]

The Record Formats establish the arrangement of fields on your report and in what segment of the page they are to print.

Field	Explanation
Opt	<p>Enter the appropriate number to indicate you want to select one of the following values:</p> <p>File/field pick list of ampersand functions.</p> <p>File/field pick list for fast path functions.</p> <p>List of defined fields in the format.</p> <p>Delete format.</p> <p>Record format keywords.</p>
Format Name	<p>Report record format.</p> <p>The format name will be the Heading, Detail, or Total. If additional formats are required, add 1 to the previous format with the same name.</p>
Type	Record format type, usually REPORT.

Figure 19-13 Example F16 - the List of Defined Fields screen

92540		List of Defined Fields				
Report: R928400						
Opt	Fmt/Field	Description	Row/Col	Typ	Size	Use
—	HEADING1	Record Format	REPORT			
—	*LITER		001 003		6	0
—	VCOCO	Company Name	001 046	A	40	0
—	VTX001	Page No.	001 112	A	12	0
—	*PAGE		001 125		4	0
—	RRTTL@	Inventory by Business Unit	002 046	A	40	0
—	VTX002	Date -	002 112	A	12	0
—	*DATE		002 125		6	0
—	RRTXT2	Processing Option Text	003 046	A	40	0
—	RRTXT3	Processing Option Text	004 046	A	40	0
—	VTX003	Cost	006 002	A	12	0
—	VTX006	Item	006 046	A	2	0
—	VTX009	Item	006 080	A	8	0
—	VTX011	Ship	006 109	A	8	0
Opt: 4=Delete 5=Display/Update F3=Exit F12=Prev Screen						

Function Key	Description
F17	Used to maintain vocabulary override fields.

Figure 19-14 Example F17

928400		Inventory by Business Unit			
		-----Define-Soft-Coding-Fields-----			
Business Unit	Dict	CH	Text Description	Screen	
-----	Name		Field		
000000000000	PAGN	E	Page No.	VTX001	0
	DATE	E	Date -	VTX002	
	XCC	C	Business	VTX003	00
	XCC	D	Unit	VTX004	
	DL01	C	Description	VTX005	
	XTY	C	Item	VTX006	
	XTY	D	Type	VTX007	
	DL01	C	Description	VTX008	
	XIT	C	Item	VTX009	
	XIT	D	Number	VTX010	
	XDT	C	Ship	VTX011	
	XDS	D	Description	VTX012	
-----F3=Exit--F12=Prev-----					

You must save your report at least once to update vocabulary overrides by this method. This is because when you are first defining a report, the vocabulary override record is not created until you save the report.

Function Key	Description
F19	Window Left.
F20	Window Right.

19.4 Compiling A Report

To compile a report
From Software Versions Repository

Figure 19–15 Software Versions Repository screen

```

9801                      Software Versions Repository
Action Code. . . . . I
Member ID. . . . . R228400
Description. . . . . Inventory by Cost Center w/o Subheadings
Function Code. . . . . PRTF Printer Files
Function Use. . . . . 161 Simple Reports
System Code. . . . . 92 Computer Assisted Design
Reporting System. . . . . 92 Computer Assisted Design
Base Member Name. . . . . R228400 File Prefix. . .
Maint/RSTDSP. . . . . 1 Omit Option. . . . . Generation Sev. .
Copy Data (Y/N). . . . . N Optional File. . . . . Common File. . . N

O Source Object Source SAR Version S D User Date
P Library Library File Number ID C P ID Modified
  JDFSRC71 JDFOB771 JDESRC 814451 A71 1 - QUARLES 10/26/94
14 STB301SRC STB301OBJ JDESRC 241883 A71 2 - STUDENT3 07/19/95

-
Opt: 1-Browse 2-Edit 3=Copy 5=SAR 8=Print 9=Dlt 10=Design 14=Crt F24=More

```

1. Enter 14 next to the member in the subfile that you want to create and press Enter.
A form of printer file parameters displays.

Figure 19–16 Printer File Parameters screen

```

Printer File Parameters
Member ID. . . . . R928400
Forms Length. . . . . 068
Forms Width. . . . . 132
Lines/Inch (4/6/8/9) . . . 8
Char./Inch (10/15) . . . 15
Overflow Line. . . . . 062
Align Forms. . . . . N
Form Type. . . . . *STD
Copies . . . . . 001
Separator Pages. . . . . 1

```

2. Do one of the following:
 - Accept the defaults.
 - Change the defaults, as necessary.

Note: Make sure Copies is non-zero.

19.5 Changing the Compile Option Defaults for Reports

You must compile reports through the JD Edwards World compiler by this method so that R98COVER and R98RPTH are pulled in for the cover page and help instructions when the Function Code is PRTF. Only one PRTF can be included in an RPG program. Second print files or Special form print files must have a Function Code of PRTS in SVR. Compiling PRTF items through the Production Development Manager (PDM) or some other method will not bring the additional formats in automatically.

To change compile option defaults for reports

The Data Dictionary default values were set for 8 ½ by 14 printer paper.

Change the Data Dictionary defaults for the following data items for your purposes:

Item	Description
#FLN	Forms Length
WDTH	Forms Width
LPI	Lines Per Inch
#CPI	Characters Per Inch
#OVF	Overflow Line Number (Usually forms length minus one inch.)
#ALN	Alignment (Y/N)
#FTY	Form Type
#CPY	Number of Copies
#SPG	Number of Separator Pages

Note: Some severity level 10 errors can occur when your report compiles because of R98COVER (DREAM Writer cover page) and R98RPTH (DREAM Writer help instructions). These are only warning errors.

Part IV

Programming Standards

This part contains these chapters:

- [Chapter 20, "Overview to Programming Standards"](#)
- [Chapter 21, "Program Specifications"](#)
- [Chapter 22, "Program Overview"](#)
- [Chapter 23, "Program Structure"](#)
- [Chapter 24, "User Spaces"](#)
- [Chapter 25, "User Indices"](#)
- [Chapter 26, "File Servers"](#)
- [Chapter 27, "Functional Servers"](#)
- [Chapter 28, "Source Debugger"](#)
- [Chapter 29, "Software Scan and Replace"](#)
- [Chapter 30, "Performance Issues"](#)

Overview to Programming Standards

This chapter contains these topics:

- [Section 20.1, "Programming Standards"](#)

20.1 Programming Standards

The Program Generator serves as the primary enforcer of JD Edwards World programming standards. These standards include subroutines and consistent formats that ease the maintenance process. The following areas are covered in the programming standards.

- Program Specifications
- Program Overview
- Program Structure
- Performance Issues
- User Spaces
- User Indices
- File Servers
- Functional Servers
- Group Jobs
- JD Edwards World Source Debugger

Program Specifications

This chapter contains these topics:

- [Section 21.1, "About Program Specifications"](#)
- [Section 21.2, "What Are Header \(Control\) Specifications?"](#)
- [Section 21.3, "What Are File Description Specifications?"](#)
- [Section 21.4, "What Are Extension Specifications?"](#)
- [Section 21.5, "What Are Input Specifications?"](#)
- [Section 21.6, "What Are Calculation Specifications?"](#)
- [Section 21.7, "What Are Output Specifications?"](#)

21.1 About Program Specifications

There are several kinds of RPG/400 specifications as described in IBM's Languages: RPG/400 User's Guide. When your source program is compiled, these specifications are arranged in the following sequence:

- [Section 21.2, "What Are Header \(Control\) Specifications?"](#)
- [Section 21.3, "What Are File Description Specifications?"](#)
- [Section 21.4, "What Are Extension Specifications?"](#)
- [Section 21.5, "What Are Input Specifications?"](#)
- [Section 21.6, "What Are Calculation Specifications?"](#)
- [Section 21.7, "What Are Output Specifications?"](#)

An RPG/400 program does not have to use all specifications. A typical JD Edwards World program contains Header, File Description, Extension, Input, and Calculation specifications. Few programs have Output specifications.

Note: There are a few programs which have been converted to, or written in, RPGIV (ILE). RPGIV has been available since 1994. RPGIV programs have Data specification entries and no Extension specification entries. Consult IBM reference manuals for details.

21.2 What Are Header (Control) Specifications?

The Header (control) specifications (H specs) include the name of the program.

- The first line identifies the program, P55011X, including its description, Item Information Update.
- The next fourteen lines are comments that are included in JD Edwards World programs for copyright purposes and reproduction restrictions.

Figure 21–1 Header (Control) Specifications

```

Columns . . . : 1 71      Browse      DEVSRC/JDESRC
SEU====> _____ P55011X
FMT ** ..... 1 ..... 2 ..... 3 ..... 4 ..... 5 ..... 6 ..... 7
***** Recalling of data *****
0001.00 H/TITLE P55011X - Item Information Update
0002.00 H*
0003.00 H*
0004.00 H* Copyright (c) 1993
0005.00 H* J. D. Edwards & Company
0006.00 H*
0007.00 H* This unpublished material is proprietary to
0008.00 H* J. D. Edwards & Company. All rights reserved.
0009.00 H* The methods and techniques described herein are
0010.00 H* considered trade secrets and/or confidential.
0011.00 H* Reproduction or distribution, in whole or in part,
0012.00 H* is forbidden except by express written permission
0013.00 H* of J. D. Edwards & Company.
0014.00 H*
0015.00 H*
0016.00 F*
F3=Exit F5=Refresh F9=Retrieve F10=Cursor F12=Cancel
F16=Repeat find F24=More keys

```

21.3 What Are File Description Specifications?

File description specifications (F Specs) describe all the files that your program uses. The information for each file includes:

- The name of the file
- How the file is used (for example, input)
- The size of records in the file for internal files or if the file has an external definition
- Whether or not the file is keyed
- Input or output device used for the file
- If the file will have records added to it

Figure 21–2 File Description Specifications

```

Columns . . . : 1 71      Browse      DEVSRC/JDESRC
SEU====> _____ P55011X
FMT ** ..... 1 ..... 2 ..... 3 ..... 4 ..... 5 ..... 6 ..... 7
0027.00 F*
0028.00 F*0001 IP E K DISK
0029.00 F*501X UP E K DISK
0030.00 F*501X CP E K DISK
0031.00 F* KINFGS KINFGS
0032.00 F*
0033.00 F* Copy Member for Composite Common Subroutine - C0001
0034.00 F*
0035.00 F/COPY JDECPY.D0001
0036.00 F*
0037.00 E*
0038.00 E* PROGRAM TABLES AND ARRAYS
0039.00 E*
0040.00 E*
F3=Exit F5=Refresh F9=Retrieve F10=Cursor F12=Cancel
F16=Repeat find F24=More keys

```

When the Program Generator generates a program, it arranges the included files in alphabetical order within the F Specs.

When a program runs, it opens the files in bottom-to-top order. Some general rules, in regard to files, are the following:

- Place the files that have the most I/Os at the bottom of the F specs.
- Place any small usage files or files that are closed after first use at the top of the F specs.
- Place the display or print files at the bottom of the list.

Line 35 shows a request for the compiler to copy in F specs from JDECPY. All F spec copy names begin with D.

21.4 What Are Extension Specifications?

Extension specifications describe all tables and arrays used in the program. The information includes:

- Name of the file, table, or array
- Number of entries in a table or array input record
- Length of the table or array entry
- Optional comment text

Figure 21–3 Extension Specifications

Columns	1	71	Browse	DEVSRC/JDESRC
SEU=>>				P55011X
FMT **	1	2	3	4
0040.00	E*			
0041.00	E*			
0042.00	E*			
0043.00	E*			
0044.00	E	EMK	64 4	Error Msg
0045.00	E	@MK	64 1	Error Msg
0046.00	E	@ER	64 4	Error Msg
0047.00	E	@DV	40 1	Deflt Wk
0048.00	E*			
0049.00	E*			
0050.00	E*	Copy Member for Composite Common Subroutine - C0001		
0051.00	E*			
0052.00	E/COPY	JDECPY, E0001		
0053.00	E*			
F3=Exit F5=Refresh F9=Retrieve F10=Cursor F12=Cancel				
F16=Repeat find F24=More Keys				

Lines 44 through 47 are used in this program to facilitate error handling and field editing.

- The first line defines an array called EMK which has a maximum of 64 entries, each with a length of 4 characters.

Line 52 requests that the compiler program copy in a specific set of E Specs.

- The E Specs, E0001, are used in any program that executes the common subroutine, C0001.

21.5 What Are Input Specifications?

Input specifications describe the records, fields, data structures, and named constants used by the program. The information in the input specifications includes:

- The name of the file
- The sequence of record types
- Whether record-identifying indicators, control-level indicators, field-record relation indicators, or field indicators are used
- Whether data structures, look-ahead fields, record identification codes, or match fields are used

- The type of each file (alphanumeric or numeric; packed-decimal, zoned decimal, or binary format)
- The location of each field in the record
- The name of each field in the record
- All named constants

Figure 21–4 Input Specifications

Columns	1	71	Browse	DEVSRG/JDESRC
SEU==>>				P55011X
PMT **	1	2	3	4
0067.00	1	2	3	4
0068.00	1	2	3	4
0069.00	1	2	3	4
0070.00	1	2	3	4
0071.00	1	2	3	4
0072.00	1	2	3	4
0073.00	1	2	3	4
0074.00	1	2	3	4
0075.00	1	2	3	4
0076.00	1	2	3	4
0077.00	1	2	3	4
0078.00	1	2	3	4
0079.00	1	2	3	4
0080.00	1	2	3	4
0081.00	1	2	3	4
0082.00	1	2	3	4
0083.00	1	2	3	4

Lines 73 through 83 are used to define some of the vocabulary overrides that appear on this screen.

- The ending lengths change from program to program, and the program retrieves the values for each field at the time it executes the housekeeping subroutine, S999.
- In JD Edwards World RPGIV (RPGL) programs, there may be D specs and no I or E specs.

21.6 What Are Calculation Specifications?

Calculation specifications describe the calculations to be done on the data and the order of the calculations. Calculation specifications can also be used to control certain input and output operations. The information includes:

- Control-level and conditioning indicators for the operation specified (generally not used in JD Edwards World software)
- Fields or constants to be used in the operation
- The operation to be processed
- Whether resulting indicators are set after the operation is processed

Figure 21–5 Calculation Specifications

Columns	1	71	Browse	DEVSRC/JDESRC
SEU=>	1	2	3	4
PMT **	1	2	3	4
0098.00	C*	MAINLINE PROGRAM		
0099.00	C*	*****		
0100.00	C*			
0101.00	C*	Process housekeeping.		
0102.00	C*			
0103.00	C*	EXCR S999		
0104.00	C*	*****		
0105.00	C*			
0106.00	C*	If LR on, end program.		
0107.00	C*			
0108.00	C*	*INLR CASEQ'1'	END	
0109.00	C*	*****		
0110.00	C*			
0111.00	C*	If automatic inquiry set, process inquiry.		
0112.00	C*			
0113.00	C*	\$AUTO CASEQ'1'	S003	24
0114.00	C*	*****		
F3=Exit F5=Refresh F9=Retrieve F10=Cursor F12=Cancel				
F16=Repeat find F24=More keys				

The C Specs are the heart of the processing of a program. JD Edwards World programs are designed with a MAINLINE portion which is a select set of C Specs that call other subroutines.

21.7 What Are Output Specifications?

Output specifications describe the records and fields in the output files and the conditions under which output operations are processed. They include information such as:

- Name of the file
- Type of record to be written
- Spacing and skipping instructions of printer files
- Output indicators that condition when the record is to be written
- Name of each field in the output record
- Location of each field in the output record
- Edit codes and edit words
- Constants to be written
- Format name for a workstation file

Figure 21–6 Output Specifications

Columns	1	71	Browse	DEVSRC/JDESRC
SEU=>	1	2	3	4
PMT **	1	2	3	4
2334.00	CSR	MOVE '0026'	EMK,08	Inv MCV
2335.00	CSR	MOVE '0027'	EMK,09	Inv Desc Ttl
2336.00	C*	*****		
2337.00	C*			
2338.00	C*	Load invalid action code array.		
2339.00	C*			
2340.00	CSR	MOVEA'	anAC	
2341.00	C*	*****		
2342.00	C*			
2343.00	C*	Load system date.		
2344.00	C*			
2345.00	CSR	TIME	\$WRK12 120	
2346.00	CSR	MOVE \$WRK12	\$SEDT 60	
2347.00	C*	*****		
2348.00	CSR	END999	ENDSR	
2349.00	C*	*****		
2350.00	OI5501X	E	UNLOCK	
F3=Exit F5=Refresh F9=Retrieve F10=Cursor F12=Cancel				
F16=Repeat find F24=More keys				

JD Edwards World uses the RPG EXCPT operation to release locks on data records. The O Specs inform the program which record format is to be released when the

EXCPT UNLOCK calculation is performed. Additional formats can be identified with a name such as UNLCKA or UNLCKB.

Note: Typically, JD Edwards World does not perform reporting functions using O Specs.

You can use the Opcode "UNLCK" instead of EXCPT/O-SPECS.

Program Overview

This chapter contains these topics:

- [Section 22.1, "About the Program Overview"](#)
- [Section 22.2, "Subroutines"](#)
- [Section 22.3, "Error Handling"](#)
- [Section 22.4, "Indicator Usage"](#)
- [Section 22.5, "Documentation"](#)
- [Section 22.6, "Miscellaneous Items"](#)

22.1 About the Program Overview

The program overview provides a basic overview of the standards used in a program. It includes the following:

- [Section 22.2, "Subroutines"](#)
- [Section 22.3, "Error Handling"](#)
- [Section 22.4, "Indicator Usage"](#)
- [Section 22.5, "Documentation"](#)
- [Section 22.6, "Miscellaneous Items"](#)

22.2 Subroutines

The Program Generator uses two categories of subroutines:

- Standard Subroutines
- Common Subroutines

22.2.1 Standard Subroutines

The Program Generator includes the required standard routines in the Calculation Specifications at the time it generates a program. It arranges them in alphanumeric order.

If you must enter your own standard subroutine, name it in such a way that it will be executed in the necessary order. For example, if you need your subroutine to be executed after the scrub and edit subroutine (S005) but before the update files subroutine (S010), begin the name with an S and then use a three to four character suffix that fits in logically, such as S005A or S006.

Standard subroutine code lines are identified in positions 7 and 8 with SR. Their names always begin with an S. Subroutines are separated by a single line of asterisks. Major blocks of code within a subroutine are separated by a single line of dashes.

Figure 22–1 Standard Subroutine Code Lines

```

1870.00      CSR              MOVE *BLANK      HRJBCD
1871.00      CSR              MOVE *BLANK      HRJBSJ
1872.00      CSR              MOVE *BLANK      HRJBNV
1873.00      CSR              END
-----
1874.00      C*-----
1875.00      CSR              ENDSR001      ENDSR
1876.00      C*-----
1877.00      C*              SUBROUTINE S003 - Edit Key
1878.00      C*
1879.00      C*
1880.00      C*

```

Place an END tag on the ENDSR statement. The TAG name should start with END. The subroutine name is added as a suffix. For example, END001 would be used for subroutine S001. Do not use the end tag for anything else. Use a T tag if the code needs to be executed prior to the ENDSR statement. For example, T001 would be used for subroutine S001 if the tag is used in the middle of the subroutine.

Figure 22–2 Subroutine End Statement

```

1874.00      C*-----
1875.00      CSR              ENDSR001      ENDSR
1876.00      C*-----

```

22.2.2 Common Subroutines

Common subroutines are maintained outside the program and are included at the appropriate times using the COPY statement. Common subroutines are also referred to as copy modules for that reason. JD Edwards World stores all common subroutines in the file JDECPY.

At compile time, the compiler copies in source code for all instances of the COPY statement. The included code displays only once and can be called from anywhere within the program.

The statement that instructs the compiler to copy in the source code is shown below. Single lines of asterisks separate common subroutines.

Figure 22–3 Compiler Instruction Statement to Copy Source Code

```

0731.00      C*-----
0732.00      C*
0733.00      C*      Copy Common Subroutine - Right Justify Numeric Fields
0734.00      C*
0735.00      C/COPY JDECPY.C0012
0736.00      C*-----

```

This example shows how the COPY statement in the source (above) brings in additional code to the compiled source.

Figure 22–4 Results from Copy Statement Above

```
73400 C*
73500 C/COPY JDECPY.C0012
Q000000+ MEMBER C0012 IN FILE JDECPY LIBRARY JDESRC OPENED FOR /COPY.
Q000100+ C*****
Q000200+ C* This is part of a composite common subroutine. In
Q000300+ C* order for the subroutine to work correctly, the
Q000400+ C* RPG program must /COPY in the following members:
Q000500+ C* E0012, C0012
Q000600+ C*****
Q000700+ C* MAINLINE PROGRAM
Q000800+ C*
Q000900+ C*
Q001000+ C*
Q001100+ C* SUBROUTINE C0012 - Right Justify Numeric Fields
Q001200+ C* -----
Q001300+ C*
Q001400+ C* PURPOSE
Q001500+ C* -----
Q001600+ C* To provide a subroutine common to all programs which
Q001700+ C* right justifies numeric fields and places the sign over
Q001800+ C* the low order byte of the fields, designated by either a
Q001900+ C* leading or trailing minus sign. This routine also ignores
Q002000+ C* all non-numeric characters in the input field, and
Q002100+ C* determines the placement of the decimal point.
Q002200+ C*
Q002300+ C* REMARKS
Q002400+ C* -----
Q002500+ C* Prior to executing this subroutine data from an
Q002600+ C* alphanumeric input field should be placed in the array
Q002700+ C* named 'ARM' with a 'MOVEA' command. The right justified
Q002800+ C* number is available from the subroutine field named
Q002900+ C* 'NUMR', which is a 15 digit 6 decimal field.
Q003000+ C* CAUTION: The largest number that can be handled
Q003100+ C* by this subroutine is 999,999,999.999999.
Q003200+ C* However, the input field may contain only 15
Q003300+ C* numbers.
Q003400+ C*
Q003500+ C*
Q003600+ CSR C0012 BEGSR
Q003700+ C* -----
Q003800+ C*
Q003900+ CSR Z-ADD0 NUMR 299
Q004000+ CSR Z-ADD0 NUMR2 152 Compile only
Q004100+ CSR Z-ADD0 NUMR3 159 Compile only
Q004200+ C*
Q004300+ CSR MOVEANM #ALNUM
Q004400+ CSR CABEQ*BLANKS KNO012
Q004500+ CSR MOVE *ALL'0' #ALNUM 22
```

The following user defined code contains an online listing and specifications:

- Install System Code: 93
- User Defined Code: /C

22.3 Error Handling

JD Edwards World has devised an efficient means of handling errors by way of arrays.

Figure 22–5 Error Handling Arrays

Columns	1	71	Browse	DEVSRC/JDESRC
SEU=>				P55011X
0040.00	E*			
0041.00	E*			
0042.00	E*			
0043.00	E*			
0044.00	E	EMK	64 4	Error Msg
0045.00	E	@MK	64 1	Error Msg
0046.00	E	@ER	64 4	Error Msg
0047.00	E	@DV	40 1	Dflt Wrk
0048.00	E	@AV	10 10	Allowed Values
0049.00	E	@40	40 1	Allowed Values
0050.00	E	@10	10 1	Allowed Values
0051.00	E*			
0052.00	E*			
0053.00	E*			
0054.00	E*			
0055.00	E/COPY JDECPY.E0001			
0056.00	E*****			
0057.00	E*			
0058.00	E*			
0059.00	E*			
0060.00	E/COPY JDECPY.E0012			

The EMK array holds the four byte data dictionary name of every error that could occur in this program. The array is loaded in Housekeeping (S999).

- The @MK array maintains a flag setting for each error identified in EMK. If one of the errors occurs, the flag is set on.
- The @ER array loads the related error messages when the user presses F7 to view the errors that actually occurred.

- A program may have up to 64 errors.

The call to the error message handling program is shown below.

Figure 22–6 Call to the Error Message Handling Program

```

Columns . . . : 1 71      Browse      DEVSRV/JDESRV
SEU====>      P55011X
0278.00 C*
0279.00 C*      If Display errors pressed, exit to error messages.
0280.00 C*      -----
0281.00 C*
0282.00 CSR      @AID      IFBQ #FERRD      #G
0283.00 CSR      Z-ADD1      #H
0284.00 CSR      Z-ADD1      #H
0285.00 CSR      #G      DOWN164
0286.00 CSR      @MK,#G      IFBQ '1'
0287.00 CSR      MOVE      EMK,#G      @ER,#H
0288.00 CSR      ADD      1      #H
0289.00 CSR      END
0290.00 CSR      ADD      1      #G
0291.00 CSR      END
0292.00 CSR      CALL' P0000E'      98
0293.00 C*
0294.00 CSR      PARM      @ER
0295.00 CSR      GOTO ENDEXE
0296.00 C*
0297.00 CSR      -----
0298.00 C*      END

```

If any error flag is set to one, then the program moves the corresponding data item from the array of all possible errors (EMK) into the array of the errors that have actually occurred (@ER). P0000E is called to display the errors when the function key is pressed.

The next example of code shows how a flag is set in the @MK array.

Figure 22–7 A Flag Set in the @MK Array

```

Columns . . . : 1 71      Browse      DEVSRV/JDESRV
SEU====>      P55011X
0347.00 C*
0348.00 C*      If error on read, set error.
0349.00 C*
0350.00 CSR      *IN#2      IFBQ '1'
0351.00 CSR      SETON
0352.00 CSR      MOVE      '1'      @MK,2      9341
0353.00 CSR      GOTO ENDEXE
0354.00 C*
0355.00 CSR      END
0356.00 CSR      END
0357.00 CSR      END
0358.00 C*
0359.00 C*      If ROLL DOWN key pressed, process read prior.
0360.00 C*      -----
0361.00 C*
0362.00 CSR      @AID      IFBQ #FROLD
0363.00 C*
0364.00 C*      Reset error indicators if roll
0365.00 C*
0366.00 CSR      MOVE$RESET      *IN,41
0367.00 CSR      MOVE      '0'      *IN,40

```

22.4 Indicator Usage

There are 99 indicators available for use. They are grouped by purpose. The chart on the next page lists the available indicators and their description.

Indicator	Explanation
01	Causes the Invalid Function Key Pressed message to appear
02	Dictates the color palette to be used
15	Indicates a function key was pressed
20	Handles the clear screen action code
21	Handles the add action code
22	Handles the change action code
23	Handles the delete action code

Indicator	Explanation
24	Handles the inquire action code
25	Handles the inquire action code 'P' for print (payroll)
31	Used in conjunction with subfile processing to initiate the INVITE or SFLCLR keyword. Using INVITE will slow processing
32	Used in conjunction with subfile processing initiating the keyword SFLNXTCHG
37	Used in conjunction with subfile processing to avoid display of an empty subfile (used only with inquiry subfiles)
38	Used in conjunction with subfile processing to highlight the last record in the display (keyword SFLDSP) and avoid display of an empty subfile
40-79	Used for error processing to indicate which fields are in error and need to be highlighted
40	Reserved for errors in the Action Code field
41	Reserved for errors in the key fields
80-89	General reusable one-time indicators. Use them as needed
93	Global error indicator that highlights line 24
98	Indicates a chain or read failure
99	Indicates a record is in use or file error
OF	Indicates overflow for report processing
LR	Indicates that the last record has been read and the program should end normally
RT	Indicates that a temporary or final halt in the program should take place. Returns to calling program leaving files open

22.5 Documentation

In the F specifications the program contains several comment lines that are to serve as the program revisions log. The log should list all programmers who have revised the program, the date the revisions were made, and the SAR outlining the change that was made.

Figure 22–8 Program Revision Log

0016.00	F*	PROGRAM REVISION LOG			
0017.00	P*				
0018.00	P*				
0019.00	P*				
0020.00	P*	Date	Programmer	Nature of Revision	
0021.00	P*				
0022.00	AUTHRP*	03/18/93	MARTIN	SAR # 00000005	(AS/400 A/G)
0023.00	P*	05/01/93	RIPPEY	SAR # 00167542	

When entering comment lines, use the following conventions:

- An asterisk in column seven specifies that the line is a comment line only.
- The asterisk should be followed by four blank spaces before the comment begins.
- Precede and follow the comment lines with a blank line.

The example below shows how these conventions are observed.

Figure 22–9 How the Conventions Are Used

```

0034.00  P*****
0035.00  P*
0036.00  P* Copy Member for Composite Common Subroutine - C0001
0037.00  P*

```

22.5.1 Guidelines

Common sense should be your guide when documenting your programs. Be thorough and descriptive. Put yourself in the place of the next programmer who will inherit your work. Use English and not "programmerese" to specify the action occurring. For example, for the code shown below:

Figure 22–10 Example of Code to be Documented

```

0130.00  C*
0131.00  C      S998      CASDQ' '      S998
0132.00  C*
0133.00  C      END

```

DON'T WRITE: If \$998 is blank, execute S998.

INSTEAD WRITE: Load data field dictionary parameters (one cycle only).

Include a line of dashes beneath any line of code that branches to another line of code (CASxx, CABxx, GOTO, EXSR, CALL, BEGSR). The receiving tag statement should also be followed by a line of dashes as shown in the example below.

Figure 22–11 How to Branch Code

```

0275.00  C*
0276.00  C      EXSR S999
0277.00  C*

```

22.6 Miscellaneous Items

The following represent miscellaneous items that you should keep in mind when writing your own code.

Naming Conventions

Use the following first character to distinguish different item names:

- @ Array names
- \$ Program created field names (flags and work fields)
- # Fields defined in common subroutines

Key List (KLIST)

Key lists should all be defined in the housekeeping subroutine.

Begin the key list name with the data file prefix. For example, the Address Book Master file prefix is AB, so the key list would be ABKY01.

The Program Generator creates key lists using the following naming conventions:

- XXKY01 for physical files where XX = the file prefix. For example, ABKY01.
- When a physical file needs to have more than one key list in a program, the successive files are noted in the last character space. For example, for three key lists for the physical file F0101, the key lists would be: ABKY01, ABKY02, and ABKY03.
- XXKY0x for logical files where XX is equal to the file prefix and x is equal to the last letter of the logical file name. For example: ABKY0A for F0101LA, ABKY0B for F0101LB.
- When a logical file needs to have more than one key list in a program, the successive files are noted in the second to last character space. For example for three key lists for the logical file F0101LA, the key lists would be: ABKY0A, ABKY1A, and ABKY2A.

22.6.1 Work Fields

Define work fields only once within a program. The use of the *LIKE DEFN command is highly recommended for defining work fields when their attributes are directly tied to those of database fields.

If the work field needs to have the same attributes as a field that exists in a file, for example:

```
MOVE ABANS $$ANS
```

Then define \$\$ANS:

```
*LIKE DEFN ABANS $$ANS
```

The advantage of this method is that the work field and database field will retain the same attributes even if the database field changes.

When using work fields as a flag, you should assign them the prefix \$ and have the remainder of the name be descriptive. In the example below, the work field name is \$GLOBL. This name is more descriptive than a field name such as \$G.

Figure 22–12 Example of a Work Field Name

0831.00	C*				
0832.00	C*				
0833.00	C*				
0834.00	C*				
0835.00	CSR	@AID	IPED #P03		
0836.00	CSR		MOVE '1'	\$GLOBL 1	

Optional Files

If a program uses files which are dependent upon your particular setup, you should designate those files as user control open (UC) in the file specifications and then write the program such that they are opened, if needed, in the Housekeeping subroutine. This eliminates the need to open files unnecessarily and conserves resources.

The lines that perform the open are shown below.

Figure 22-13 Lines that Open Files

Column	1	71	Browse	JDFERC/JDESRC
SEU====>				P08320
3825.00	C*			
3826.00	C*		Check for existence of pension files.	
3827.00	C*			
3828.00	CSR		OPEN F085201	99
3829.00	CSR	*IN99	IFEQ '0'	
3830.00	CSR		MOVE '1'	\$PENS 1
3831.00	CSR		END	
3832.00	C*			
3833.00	CSR		OPEN F08501LA	99
3834.00	CSR	*IN99	IFEQ '0'	
3835.00	CSR		MOVE '1'	\$PENS2 1
3836.00	CSR		END	

If your program performs a user-controlled open for a file that is part of another system, you will also need to provide pre-compiler commands in the event the user has not purchased that system. The example below illustrates the necessary pre-compiler commands designed to address this situation.

In the example, if a Payroll client has not purchased Human Resources, the code specifies a file override and then substitutes an empty file (identified with the suffix E) which all Payroll clients receive.

Figure 22-14 Pre-compiler Commands that Perform a User-controlled Open If a File Is Part of Another System Not Purchased by the User

	***** Beginning of data *****
0001.00	OVRDDEF FILE(F082001B) TOFILE(F082001E)
0002.00	OVRDDEF FILE(F08001) TOFILE(F08001E)
0003.00	OVRDDEF FILE(F08005B) TOFILE(F08005E)
	***** End of data *****

The user-controlled opens in the program allow the program to run in the absence of certain files, whereas the precompiler commands allow the program to be compiled in the absence of those files.

Program Structure

This chapter contains these topics:

- [Section 23.1, "About Program Structure"](#)

23.1 About Program Structure

The JD Edwards World program generator produces several types of programs:

- ["Subfile Program with Selection Exits"](#)
- ["Interactive Non-Subfile Program"](#)
- ["Report Program without Subheadings"](#)
- ["Report Program with Subheadings"](#)
- ["Review an RPG Program's Source"](#)

23.1.1 Internal RPG Subroutines within JD Edwards World Programs

Standard subfile names make program maintenance easier. The system calls these subfiles primarily from the Mainline.

JD Edwards World program structure uses several types of subroutines, including:

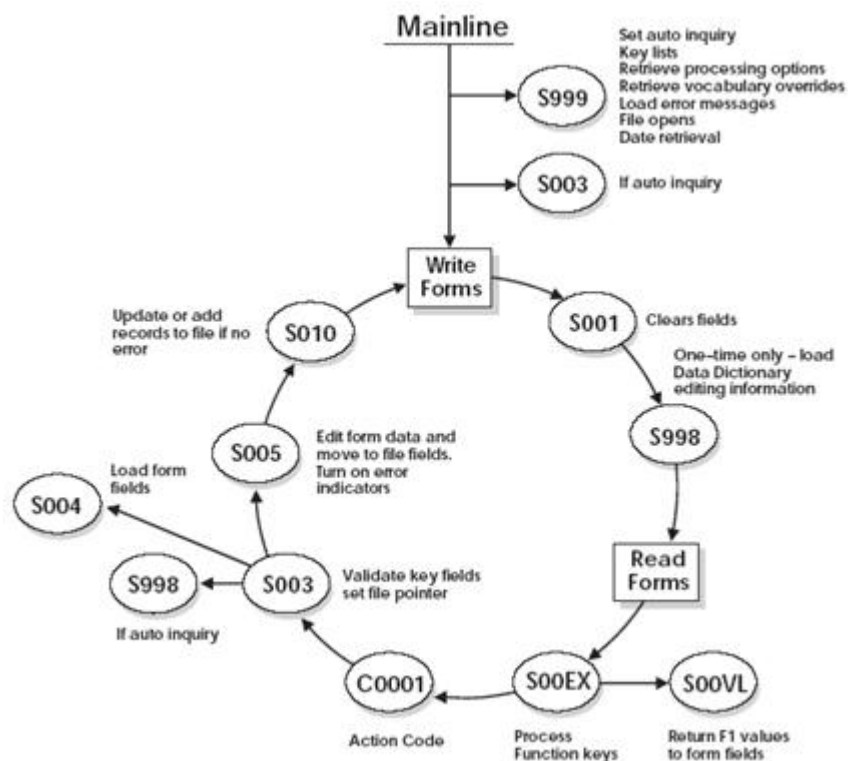
Name	Description
S00EX	Processes all function key exits. <ul style="list-style-type: none">■ Calls J96012 if F24 was pressed■ Calls X96CCX if F1 was pressed■ Calls subroutine S00VL if F1 was pressed after X96CCX was called■ Calls P0000E if F7 was pressed■ Calls P00HELP if the HELP key was pressed■ Calls subroutine S001 if F22 was pressed■ Calls all programs to process all user defined function keys
S00VL	Values returned with Cursor Sensitive Help. Is called from the subroutine S00EX after the program X96CCX is called
S00OP	Subfile Selection Exits (Options)

Name	Description
S001	Clears all database and form fields. <ul style="list-style-type: none"> ■ Usually only clears key fields and VC0 fields if F22 (Clear) is pressed
S002	Checks for level breaks for reports. <ul style="list-style-type: none"> ■ Turns on level break flags. ■ Retrieves total line description
S003	Validates the key fields. Calls S998 subroutine if auto inquire was invoked Sets the file pointer. <ul style="list-style-type: none"> ■ Performs a SETLL or CHAIN if a single record maintenance program ■ Performs a SETLL for subfile programs Calls a subroutine S004 to load form or report fields Monitors for no subfile records loaded if a subfile Loads unused subfile records with blanks
S004	Display or load form or report fields.
S005	Scrubs and edits form fields. <ul style="list-style-type: none"> ■ Moves screen data to database fields ■ Turns on error indicators if a field is in error ■ Updates or writes records to the database file if a subfile ■ Updates the subfile
S010	For reports with level breaks it: <ul style="list-style-type: none"> ■ Prints the total ■ Clears the level break totals ■ Prints the grand total (if it has reached the end of the file) ■ Prints the detail ■ Adds to the new level break totals ■ Calls subroutine S020 if it is a report with subheadings If it is not a report, it updates, adds, or deletes records from the database file <ul style="list-style-type: none"> ■ Turns on F22 (Clear) to force S001 to be executed to clear the buffer before reading another record.
S020	Print Report Subheadings.
S998	Loads Data Dictionary values. (One time only) Retrieves row description for level breaks and subheadings, if applicable

Name	Description
S999	Housekeeping. (One time only) <ul style="list-style-type: none"> ■ Sets auto inquiry ■ Defines key lists ■ Retrieves processing options and level breaks, if applicable ■ Retrieves vocabulary overrides ■ Loads error messages ■ Performs file opens ■ Current date retrieval ■ Work fields defined using *LIKE ■ Prints cover page and Helps in a report

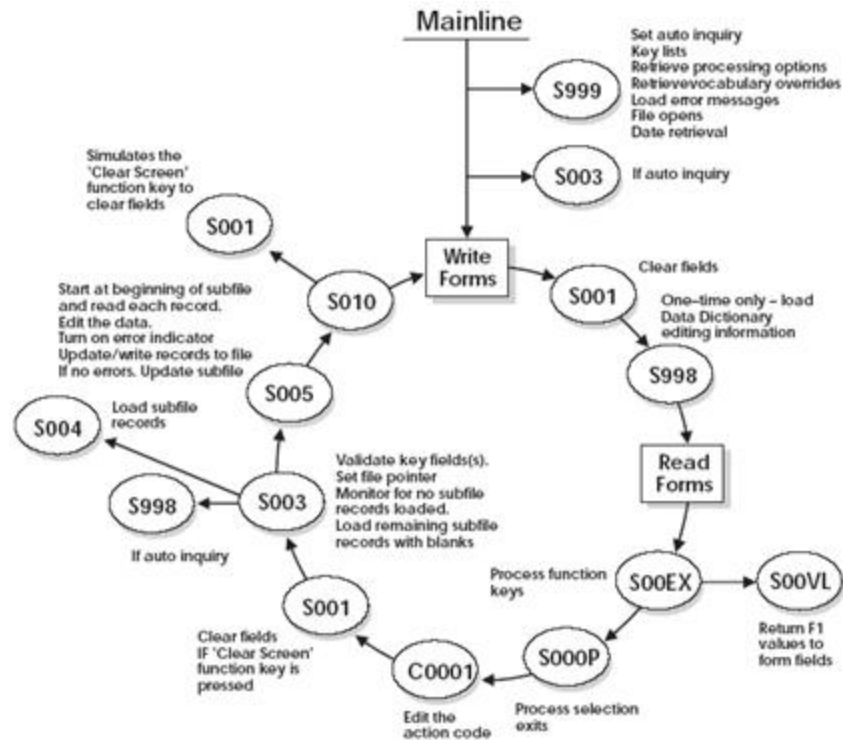
Interactive Non-Subfile Program

Figure 23–1 Interactive Non-Subfile Program



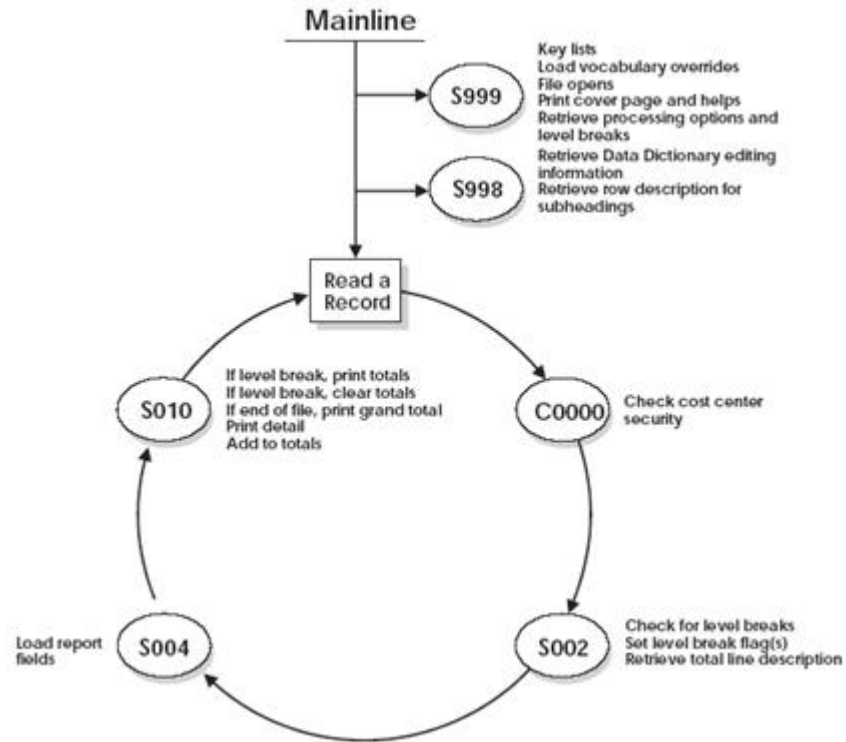
Subfile Program with Selection Exits

Figure 23–2 Subfile Program with Selection Exits



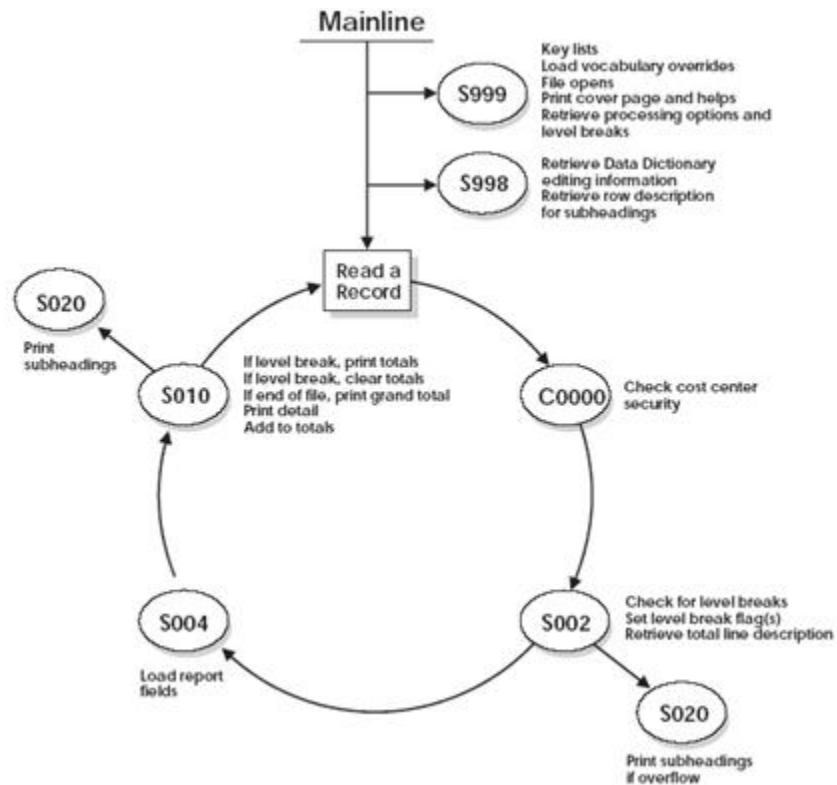
Report Program without Subheadings

Figure 23–3 Report Program without Subheadings



Report Program with Subheadings

Figure 23–4 Report Program with Subheadings



23.1.2 Review an RPG Program's Source

The following pages illustrate a maintenance program without a subfile.

Some of the more important areas and commonly used fields are highlighted and explained.

Figure 23-5 Maintenance Program without a Subfile (part 1)

1.00	H/TITLE P928011	Item Master Information	
2.00	H*		
3.00	H*		
4.00	H*		
5.00	H*		
6.00	H*		
7.00	H*		
8.00	H*		
9.00	H*		
10.00	H*		
11.00	H*		
12.00	H*		
13.00	H*		
14.00	H*		
15.00	H*		
16.00	F*		
17.00	F*		
18.00	F*		
19.00	F*		
20.00	F*		
21.00	F*		
22.00	00AUTHRF*		
23.00	F*		
24.00	F*		
25.00	F*		
26.00	F*		
27.00	F*		
28.00	F*		
29.00	F*		
30.00	F*		
31.00	FF0001	IF E K DISK	
32.00	FF92801	UF E K DISK	
33.00	FV928011	CF E WORKSTN KINFDS SEVFDS A	
34.00	F*		
35.00	F*		
36.00	F*		
37.00	F		
38.00	F/COPY JDECPY_D0001		
39.00	F*		
40.00	E*		
41.00	E*		
42.00	E*		
43.00	E*		
44.00	E		
45.00	E		
46.00	E		
47.00	E		
48.00	E		
49.00	E*		
50.00	E*		
51.00	E*		
52.00	E*		
53.00	E/COPY JDECPY_E0001		
54.00	E*		
55.00	E*		
56.00	E*		
57.00	E*		
58.00	E/COPY JDECPY_E0012		
59.00	E*		
60.00	E*		
61.00	E*		
62.00	E*		
63.00	E/COPY JDECPY_E997		
64.00	E*		
65.00	I*		
66.00	I*		
67.00	I*		
68.00	I*		

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PROGRAM REVISION LOG

Date	Programmer	Nature of Revision
12/07/93	QUARLES	SAR # 241883 (AS/400 A/G)

Shows all SARs
used to make
changes to the
program

B0010 - Standard Maintenance Program Type
This program provides the standard single cycle
processing for adding, changing, deleting and
inquiring into data records as requested.

The Program
Generator puts in
numeric order. RPG
opens from bottom
to top so JDE puts
more heavily used
files at the bottom.

FF0001	IF E	K	DISK		
FF92801	UF E	K	DISK		
FV928011	CF E		WORKSTN	KINFDS	SEVFDS

Informational
data structure
for the video

PROGRAM TABLES AND ARRAYS

EMK	64	4	Error Msg
@MK	64	1	Error Msg
@ER	64	4	Error Msg
@DV	40	1	Dflt Wrk
@C	256	1	Literal Work

Arrays that handle
error messages

Copy Member for Composite Common Subroutine - C0001

Will copy in additional
specifications for copy
module C0001

Copy Member for Composite Common Subroutine C0012

Copy Member for Composite Common Subroutine - C997

PROGRAM INPUT SPECIFICATIONS AND DATA STRUCTURES

Figure 23-6 Maintenance Program without a Subfile (part 2)

69.00	I*	Data Structure to Load Video Screen Text	
70.00	I*		
71.00	IDSTXT	DS	1000
72.00	I	1 16 VTX001	
73.00	I	41 36 VTX002	
74.00	I	81 92 VTX003	
75.00	I	121 136 VTX004	
76.00	I	161 176 VTX005	
77.00	I	201 216 VTX006	
78.00	I	241 256 VTX007	
79.00	I	281 296 VTX008	
80.00	I	321 336 VTX009	
81.00	I	361 376 VTX010	
82.00	I	401 416 VTX011	
83.00	I	441 456 VTX012	
84.00	I	481 496 VTX013	
85.00	I	521 536 VTX014	
86.00	I	561 576 VTX015	
87.00	I	601 616 VTX016	
88.00	I	641 656 VTX017	
89.00	I	681 696 VTX018	
90.00	I	721 736 VTX019	
91.00	I	761 776 VTX020	
92.00	I	801 816 VTX021	
93.00	I	841 856 VTX022	
94.00	I	881 896 VTX023	
95.00	I	921 936 VTX024	
96.00	I	961 976 VTX025	
97.00	I*		
98.00	I/COPY JDCOPY, 1000PINS		Data structure for commonly used indexes
99.00	I/COPY JDCOPY, 1000PERS		Data structure used with file servers
100.00	I/COPY JDCOPY, 1000PSPROG		Program status data structure
101.00	I*		
102.00	I*		
103.00	I*		
104.00	I*	Copy Member for Composite Common Subroutine - C00SC	
105.00	I*		
106.00	I/COPY JDCOPY, 1000C		Data structure for vocabulary overrides and function keys
107.00	I*		
108.00	I*		
109.00	I*	Copy Member for Server - X0005	
110.00	I*		
111.00	I/COPY JDCOPY, 1000SR		Data structure for file server X0005
112.00	I*		
113.00	I*		
114.00	I*	Copy Member for Server - X0006	
115.00	I*		
116.00	I/COPY JDCOPY, 1000661		
117.00	I*		
118.00	I*		
119.00	I*	Copy Member for Server - X0000E	
120.00	I*		
121.00	I/COPY JDCOPY, 10000E		
122.00	I*		
123.00	C*		
124.00	C*	MAINLINE PROGRAM	
125.00	C*	-----	
126.00	C*		
127.00	C*	Process housekeeping.	
128.00	C*		
129.00	C*	-----	
130.00	C*		
131.00	C*		
132.00	C*	IF LA on, and program.	
133.00	C*		
134.00	C	*INLR CASEQ'1' 800	
135.00	C*	-----	
136.00	C*		
137.00	C*	IF automatic inquiry set, process inquiry.	
138.00	C*		
139.00	C*	SAUTO CASEQ'1' 800	
140.00	C*	-----	
141.00	C	END	
142.00	C*		
143.00	C*	Begin normal program processing.	
144.00	C*	-----	
145.00	C*		
146.00	C	*INLR DOWEQ'0'	
147.00	C*		
148.00	C*	Write video screen.	
149.00	C*		

Each VTX field is 40 long
but may not use all 40.
Pulls in text from
Vocabulary Overrides.

One time only
functions

If information is passed to this
program, it will automatically
inquire on the record

Figure 23–7 Maintenance Program without a Subfile (part 3)

150.00	C	WRITEVS200111			
151.00	C	MOVE '1'	SSAID		
152.00	C	EXXR S001			
153.00	C*	-----			Clears fields
154.00	C*				
155.00	C*	Load data field dictionary parameters (one cycle only).			
156.00	C*				
157.00	C	SS00 CARRQ'1'	SS00		One time only. Pulls in Data Dictionary editing information functions
158.00	C*	-----			
159.00	C	END			
160.00	C*				
161.00	C*	Begin video screen read processing.			
162.00	C*				
163.00	C	SETOP	SS0001		
164.00	C	SSAD VS20011	SS00		
165.00	C				
166.00	C	E-ADD0	SS0000		Used for cursor sensitive help.
167.00	C*	E-ADD0	SS0000		Tells where the cursor is.
168.00	C*				
169.00	C*	If video read timed out, end program.			
170.00	C	*IN00 CARRQ'1'	SS00	LR	
171.00	C*	-----			
172.00	C	SSAID CARRQ#PS00	SS00	LR	
173.00	C*	-----			
174.00	C*				
175.00	C*	If valid function key pressed, process and return.			
176.00	C				
177.00	C	*IN15 IPRQ '1'			All function keys are assigned indicator 15 so if 15 is on, a function key has been pressed
178.00	C	EXXR S000X			
179.00	C*	-----			
180.00	C	*IN1X CARRQ'1'	SS00		
181.00	C*	-----			
182.00	C	*IN15 CARRQ'1'	END		
183.00	C*	-----			
184.00	C	END			
185.00	C*				
186.00	C*	Edit the action code.			
187.00	C*				
188.00	C	EXXR C0001			Edits the action code.
189.00	C*	-----			Checks action code security.
190.00	C*				
191.00	C*	If end of job requested, end program.			
192.00	C	SSAID CARRQ#PS00	SS00		
193.00	C*	-----			
194.00	C*				
195.00	C*	If clear screen requested, process and return.			
196.00	C				
197.00	C	SSAID IPRQ #PCLR			
198.00	C	EXXR S001			
199.00	C*	-----			
200.00	C*				
201.00	C	GOTO END			
202.00	C*	-----			
203.00	C	END			
204.00	C*				
205.00	C*	Load subfile records.			
206.00	C*				
207.00	C	EXXR S002			Sets the file pointer and calls S004 to load the video/report fields
208.00	C*	-----			
209.00	C*				
210.00	C*	If add or change, validate all video input.			
211.00	C	*IN00 CARRQ'0'	S005		If an error has not occurred, validates and edits data
212.00	C*	-----			
213.00	C	END			
214.00	C*				
215.00	C*	If no errors and not inquiry, update file.			
216.00	C				
217.00	C*				
218.00	C	*IN00 IPRQ '0'			
219.00	C	*IN24 CARRQ'0'	S010		Updates files
220.00	C	-----			
221.00	C	END			
222.00	C	END			
223.00	C*				
224.00	C*	Return for next input.			
225.00	C*				
226.00	C	END	TAG		
227.00	C*	---	---		
228.00	C*				

Figure 23–8 Maintenance Program without a Subfile (part 4)

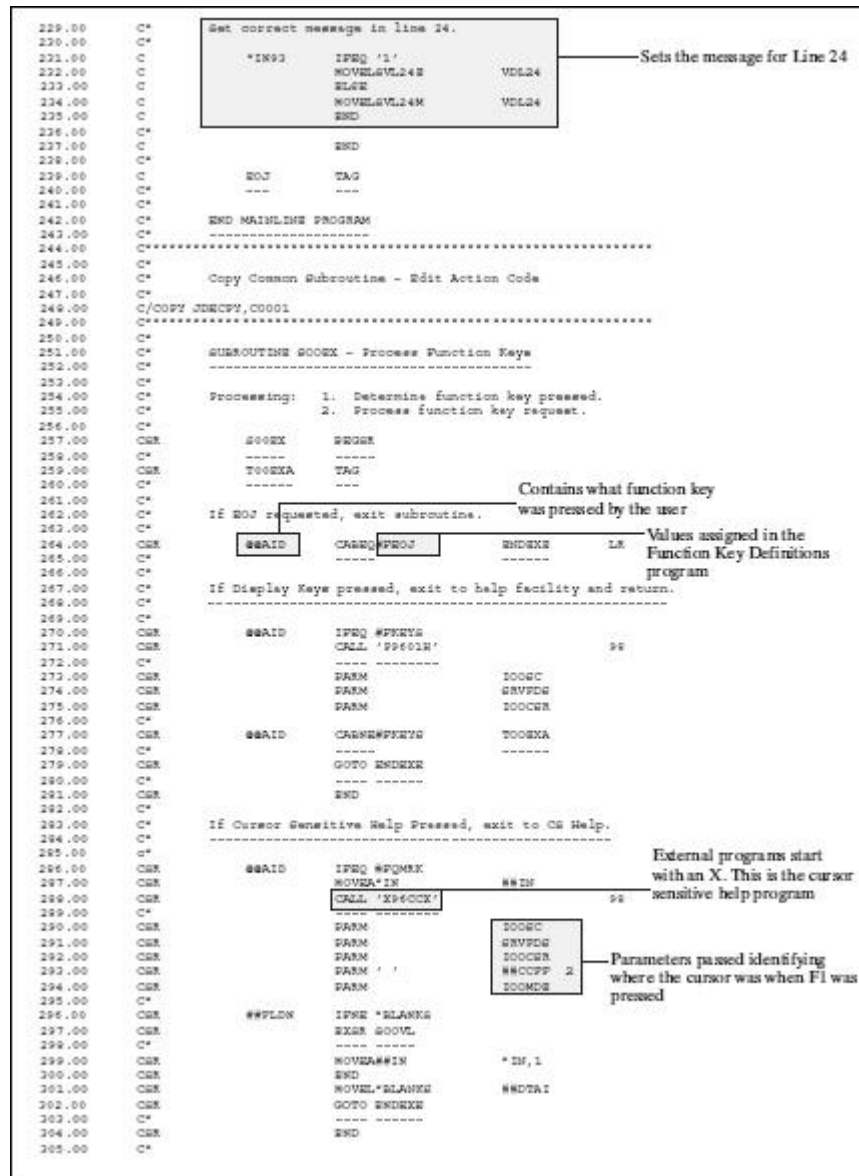


Figure 23–9 Maintenance Program without a Subfile (part 5)

```

306.00 C*      If Display errors pressed, exit to error messages.
307.00 C*      -----
308.00 C*
309.00 CWR      @SAID      IFBQ #PFRND
310.00 CWR      E-ADD1      E-ADD1      #G
311.00 CWR      E-ADD1      E-ADD1      #H
312.00 CWR      #G      DOULE#4
313.00 CWR      @MK,#G      IFBQ '1'
314.00 CWR      MOVE @MK, #G      @GR, #G
315.00 CWR      ADD 1      #H
316.00 CWR      END
317.00 CWR      ADD 1      #G
318.00 CWR      END
319.00 CWR      CALL 'P00002'      99
320.00 C*      -----
321.00 CWR      PARM      @GR
322.00 CWR      GOTO ENDENR
323.00 C*      -----
324.00 CWR      END
325.00 C*
326.00 C*      If HELF key pressed, exit to help facility and return.
327.00 C*      -----
328.00 C*
329.00 CWR      @SAID      IFBQ #PHLP
330.00 CWR      CALL 'P00HLP'      99 Access JDE program level
331.00 C*      Help information
332.00 CWR      PARM      H000
333.00 CWR      PARM      H000
334.00 CWR      PARM      I000C
335.00 CWR      PARM      @VIDE
336.00 CWR      GOTO ENDENR
337.00 C*      -----
338.00 CWR      END
339.00 C*
340.00 C*      If Clear screen pressed, clear screen and return.
341.00 C*      -----
342.00 C*
343.00 CWR      @SAID      IFBQ #PCLR
344.00 CWR      EXAM #001
345.00 C*      -----
346.00 C*      GOTO ENDENR
347.00 CWR      -----
348.00 C*      END
349.00 CWR
350.00 C*
351.00 C*      Process roll up and down keys.
352.00 C*      -----
353.00 C*
354.00 CWR      @SAID      IFBQ #PROLU
355.00 CWR      @SAID      ORBQ #PROLD
356.00 CWR      @SECUR      DOUREQ ' '
357.00 CWR      MOVE ' '      @SECUR 1
358.00 C*
359.00 C*      If ROLL UP key pressed, process read next.
360.00 C*      -----
361.00 C*
362.00 CWR      @SAID      IFBQ #PROLU
363.00 C*
364.00 C*      Reset error indicators if roll
365.00 C*
366.00 CWR      MOVE@#RESET      *IN, 41
367.00 CWR      MOVE '0'      *IN, 40
368.00 CWR      SETOP      010200
369.00 CWR      READ 102001      9901
370.00 CWR      *IN01      IFBQ '1'
371.00 CWR      @TRVRY      GETLL102001
372.00 CWR      SETOP      0200
373.00 CWR      READ102001      9902
374.00 C*
375.00 C*      If error on read, set error.
376.00 C*
377.00 CWR      *IN02      IFBQ '1'
378.00 CWR      SETOP      0341
379.00 CWR      MOVE '1'      @MK, 2
380.00 CWR      GOTO ENDENR
381.00 C*      -----
382.00 CWR      END
383.00 CWR      END

```

Figure 23-10 Maintenance Program without a Subfile (part 6)

```

385.00 C*
386.00 C* IF ROLL DOWN key pressed, process read prior
387.00 C* -----
388.00 C*
389.00 C* @@AID IFNQ #FOLD
390.00 C*
391.00 C* Reset error indicators if roll
392.00 C*
393.00 C* MOVEA#ERRSET *IN,41
394.00 C* MOVE '0' *IN,40
395.00 C* SETOF 010299
396.00 C* READP192001 9901
397.00 C* *IN01 IFNQ '1'
398.00 C* $INDEX SETLL192001
399.00 C* SETOF 0299
400.00 C* READP192001 9902
401.00 C*
402.00 C* If error on read, set error
403.00 C*
404.00 C* *IN02 IFNQ '1'
405.00 C* SETOF 9341
406.00 C* MOVE '1' @NK,2
407.00 C* GOTO ENDERR
408.00 C* -----
409.00 C* END
410.00 C* END
411.00 C* END
412.00 C*
413.00 C* Load video screen data on roll keys.
414.00 C* -----
415.00 C*
416.00 C* @@AID IFNQ #FOLD
417.00 C* @@AID CREQ #FOLD
418.00 C*
419.00 C* Release record lock or report record in use.
420.00 C*
421.00 C* *IN09 IFNQ '0'
422.00 C* EXCEPTUSLOCK
423.00 C* ELSE
424.00 C* CALL 'PDRLOCK' 01
425.00 C* -----
426.00 C* FARM #FPRDE
427.00 C* SETOF 9341
428.00 C* MOVE '1' @NK,6
429.00 C* GOTO ENDERR
430.00 C* -----
431.00 C* END
432.00 C*
433.00 C*
434.00 C* Cost Center security edit.
435.00 C*
436.00 C* MOVEA'P92001' #FILE
437.00 C* MOVEA#XKOC #MCU
438.00 C* #AUT IFNQ '1'
439.00 C* #PAUT ANDNE'1'
440.00 C* EXGR C0000
441.00 C* -----
442.00 C* END
443.00 C* #AUT IFNQ '1'
444.00 C* #PAUT ANDNE'1'
445.00 C* #AUT ANDNE'1'
446.00 C* MOVE '1' #SECUR
447.00 C* END
448.00 C* #SECUR CASEQ' ' 0004
449.00 C* -----
450.00 C* END
451.00 C*
452.00 C* END
453.00 C*
454.00 C* END
455.00 C* GOTO ENDERR
456.00 C* -----
457.00 C* END
458.00 C*
459.00 C* @@AID IFNQ '1'
460.00 C* SETOF 0193
461.00 C* GOTO ENDERR
462.00 C* -----
463.00 C* END
464.00 C*
465.00 C* ENDERR SETL00

```

Program that will display a record lock window when a record in use error is encountered

Could not find a match in the Function Key Definitions for the function key pressed, so program displays *Invalid Function Key* message.

Figure 23-11 Maintenance Program without a Subfile (part 7)

466.00	C*	*****		
467.00	C*			
468.00	C*	Copy Common Subroutine - Cost Center Security Check		
469.00	C*			
470.00	C*/COPY JDSOCV,00000			
471.00	C*	*****		
472.00	C*			
473.00	C*	SUBROUTINE SDOVL - Cursor Control Return Values		
474.00	C*			
475.00	C*			
476.00	C*	By format, find the field to update and move in the		
477.00	C*	returned value. If the format is a subfile, the record		
478.00	C*	to change is found in @@NM.		
479.00	C*			
480.00	C*			
481.00	CER	SDOVL	SDOVL	
482.00	C*	-----		
483.00	CER	##EVAL	IPRQ 'SLANE	
484.00	CER		MOVE 'SLANE	##EVAL
485.00	CER		END	
486.00	C*			
487.00	C*	Return values for fields in format V9200111		
488.00	C*			
489.00	CER	##EVAL	IPRQ 'V9200111'	
490.00	C*			
491.00	CER	##EVAL	IPRQ 'ACTION	
492.00	CER		MOVE##EVAL	ACTION
493.00	CER		GOTO ENDOVL	
494.00	C*		-----	
495.00	CER		END	
496.00	C*			
497.00	CER	##EVAL	IPRQ 'VDXIT	
498.00	CER		MOVE##EVAL	VDXIT
499.00	CER		GOTO ENDOVL	
500.00	C*		-----	
501.00	CER		END	
502.00	C*			
503.00	CER	##EVAL	IPRQ 'VDXDS	
504.00	CER		MOVE##EVAL	VDXDS
505.00	CER		GOTO ENDOVL	
506.00	C*		-----	
507.00	CER		END	
508.00	C*			
509.00	CER	##EVAL	IPRQ 'VDXOC	
510.00	CER		MOVE##EVAL	VDXOC
511.00	CER		GOTO ENDOVL	
512.00	C*		-----	
513.00	CER		END	
514.00	C*			
515.00	CER	##EVAL	IPRQ 'VDXTY	
516.00	CER		MOVE##EVAL	VDXTY
517.00	CER		GOTO ENDOVL	
518.00	C*		-----	
519.00	CER		END	
520.00	C*			
521.00	CER	##EVAL	IPRQ 'VDXDT	
522.00	CER		MOVE##EVAL	VDXDT
523.00	CER		GOTO ENDOVL	
524.00	C*		-----	
525.00	CER		END	
526.00	C*			
527.00	CER	##EVAL	IPRQ 'VDXQT	
528.00	CER		MOVE##EVAL	VDXQT
529.00	CER		GOTO ENDOVL	
530.00	C*		-----	
531.00	CER		END	
532.00	C*			
533.00	CER	##EVAL	IPRQ 'VDXIM	
534.00	CER		MOVE##EVAL	VDXIM
535.00	CER		GOTO ENDOVL	
536.00	C*		-----	
537.00	CER		END	
538.00	C*			
539.00	CER	##EVAL	IPRQ 'VDX001	
540.00	CER		MOVE##EVAL	VDX001
541.00	CER		GOTO ENDOVL	
542.00	C*			

For cursor sensitive help. Information was retrieved in program X96CCX. The retrieved information is returned to the video fields in this subroutine.

Figure 23-12 Maintenance Program without a Subfile (part 8)

```

543.00 CBR          END
544.00 C*
545.00 CBR          **FLSN      IPREQ 'VEX002
546.00 CBR          MOVE*****VAL      VEX002
547.00 CBR          GOTO END0VL
548.00 C*
549.00 CBR          END
550.00 C*
551.00 CBR          **FLSN      IPREQ 'VEX003
552.00 CBR          MOVE*****VAL      VEX003
553.00 CBR          GOTO END0VL
554.00 C*
555.00 CBR          END
556.00 C*
557.00 CBR          **FLSN      IPREQ 'VEX004
558.00 CBR          MOVE*****VAL      VEX004
559.00 CBR          GOTO END0VL
560.00 CBR          END
561.00 C*
562.00 CBR          **FLSN      IPREQ 'VEX005
563.00 CBR          MOVE*****VAL      VEX005
564.00 CBR          GOTO END0VL
565.00 C*
566.00 CBR          END
567.00 CBR          END
568.00 C*
569.00 CBR          END0VL      ENDGR
570.00 C*
571.00 C*
572.00 C*
573.00 C*      SUBROUTINE S001 - Clear Fields
574.00 C*
575.00 C*
576.00 C*      Processing: 1.  Reset all video screen and data file fields
577.00 C*                  for next transaction.
578.00 C*                  2.  Clear action code only if requested.
579.00 C*
580.00 CBR          S001      BEGIN
581.00 C*
582.00 C*      Reset fields for next transaction.
583.00 C*
584.00 C*      *MOVE      CLEARIP2301
585.00 CBR          MOVE *BLANK      ***CPL
586.00 CBR          MOVE *BLANK      ***CBL
587.00 CBR          Z-ADD*ZERO      ***COL
588.00 CBR          Z-ADD*ZERO      ***ROW
589.00 CBR          MOVE *BLANK      VEX00
590.00 CBR          MOVE *BLANK      VEX01
591.00 CBR          MOVE *BLANK      VEX02
592.00 CBR          MOVE *BLANK      VEX03
593.00 CBR          MOVE *BLANK      VEX04
594.00 CBR          MOVE *BLANK      VEX05
595.00 CBR          MOVE *BLANK      VEX06
596.00 CBR          MOVE *BLANK      VEX07
597.00 CBR          MOVE *BLANK      VEX08
598.00 CBR          MOVE *BLANK      VEX09
599.00 CBR          MOVE *BLANK      VEX10
600.00 CBR          MOVE *BLANK      VEX11
601.00 CBR          MOVE *BLANK      VEX12
602.00 CBR          MOVE *BLANK      VEX13
603.00 CBR          MOVE *BLANK      VEX14
604.00 C*
605.00 C*      Clear action code only if clear screen action.
606.00 C*
607.00 CBR          BEAID      IFREQ *PCLR
608.00 CBR          MOVE *ALL'0'      *IN,41
609.00 CBR          MOVE *ALL'0'      *IN,41
610.00 CBR          Z-ADD*ZERO      *IN,41
611.00 CBR          MOVE *BLANK      VEX001
612.00 CBR          MOVE *BLANK      VEX002
613.00 CBR          MOVE *BLANK      VEX003
614.00 CBR          MOVE *BLANK      VEX004
615.00 CBR          MOVE *BLANK      VEX005
616.00 CBR          MOVE *BLANK      VEX006
617.00 CBR          MOVE *BLANK      VEX007
618.00 CBR          MOVE *BLANK      VEX008
619.00 CBR          Z-ADD*ZERO      *IN,41
620.00 CBR          END
621.00 C*
622.00 CBR          END001      ENDGR

```

Clears all the fields in the record format for F92801

Clears the video fields

These fields will only be cleared if the user presses the function key to clear the screen. We want to save certain information like key fields and descriptions so they don't get cleared everytime S001 is executed.

Figure 23-13 Maintenance Program without a Subfile (part 9)

```

624.00 C******
625.00 C*
626.00 C* SUBROUTINE W002 - Edit Key ----- Sets the file pointer and edits the key
627.00 C*
628.00 C*
629.00 C* Processing: 1. Clear error indicators and arrays.
630.00 C* 2. Load input keys.
631.00 C* 3. Validate master file key.
632.00 C* 4. Release master file record lock.
633.00 C* 5. Load video screen output on inquiry.
634.00 C*
635.00 CBR S002 S002
636.00 C* -----
637.00 C*
638.00 C* Load data field dictionary parameters (one cycle only).
639.00 C*
640.00 CBR S999 CARRQ' ' S999
641.00 C* -----
642.00 CBR SMD
643.00 C*
644.00 C* Reset error indicators and arrays.
645.00 C*
646.00 CBR MOVE 'ALL'0' SRRST 39
647.00 CBR MOVE 'BLANK' SRRSTL 63
648.00 CBR MOVEA(SRRST *39,41
649.00 CBR MOVEA(SRRSTL SMT,2
650.00 CBR CLEARERR
651.00 C* -----
652.00 C*
653.00 C* Load video input field for - Item ID
654.00 C*
655.00 CBR MOVEAVDKIT SSM
656.00 CBR SRR C0012
657.00 C* -----
658.00 CBR 2-ADDNUMB SRRR09 30
659.00 CBR MOVE SRRR09 QXXIT
660.00 C*
661.00 C* Automatic Next Number for - Item ID
662.00 C*
663.00 CBR *IN21 IFRG '1'
664.00 CBR VDKIT ANDRG'BLANK
665.00 CBR SETON
666.00 CBR *IN21 DOWNG'1' 31
667.00 CBR MOVE SXXIT SWICH 2
668.00 CBR CALL 'X0010' 31
669.00 C* -----
670.00 CBR SARM SXXIT SRRY 4
671.00 CBR SARM SWICH
672.00 CBR SARM *SRR0 SRRTNO 30
673.00 CBR MOVE SXXTNO QXXIT
674.00 CBR MOVE SXXTNO VDKIT
675.00 CBR QXXIT SRTLLP92801 3281
676.00 CBR SMD
677.00 CBR SMD
678.00 C* -----
679.00 CBR QXXT01 CHAINIS92801 S999
680.00 C*
681.00 C* Cost Center security edit.
682.00 C*
683.00 CBR MOVEA'P92801 'SFILE
684.00 CBR MOVEA(SXMC SMCU
685.00 CBR #AUT IFRG '1'
686.00 CBR #FAUT AXXMR'1'
687.00 CBR SRR C0000 ----- Checks cost center security
688.00 C* -----
689.00 CBR SMD
690.00 CBR #AUT IFRG '1'
691.00 CBR #FAUT ANDRG'1'
692.00 CBR #MAUT ANDRG'1'
693.00 CBR MOVE '1' SRRR09 1
694.00 CBR SMD
695.00 C*
696.00 C* IF security violation, set error condition.
697.00 C*
698.00 CBR SRRR09 IFRG '1'
699.00 CBR MOVE '1' SMT,3
700.00 CBR SETON 3341

```

Figure 23-14 Maintenance Program without a Subfile (part 10)

```

701.00      CSR          MOVE ' '          $SOURCE 1
702.00      CSR          GOTO END0003
703.00      C*          -----
704.00      CSR          END
705.00      C*
706.00      C*      Edit result of read and action code.
707.00      C*
708.00      CSR          *IN99      IFBQ '1'
709.00      CSR          *IN21      COMP '0'          41 "error"
710.00      CSR          *IN21      ELSE
711.00      CSR          *IN21      COMP '1'          41 "error"
712.00      CSR          *IN21      END
713.00      C*
714.00      C*      If indicator 41 on, invalid key for action code.
715.00      C*
716.00      CSR          *IN41      IFBQ '1'
717.00      CSR          *IN41      MOVE '1'          @MK,2
718.00      CSR          *IN41      SETON
719.00      CSR          *IN41      END
720.00      C*
721.00      C*      If indicator 99 on, record in use.
722.00      C*
723.00      CSR          *IN99      IFBQ '1'
724.00      CSR          *IN99      CALL 'PPRELCK'          91
725.00      C*          -----
726.00      CSR          *IN99      PARM          ##SUDE
727.00      CSR          *IN99      MOVE '1'          @MK,6
728.00      CSR          *IN99      SETON
729.00      CSR          *IN99      END
730.00      C*          -----
731.00      C*
732.00      C*      IF not inquiry, skip remainder of subroutine.
733.00      C*
734.00      CSR          *IN24      CASEQ '0'          END0003
735.00      C*          -----
736.00      C*
737.00      C*
738.00      C*      Release record lock on master file.
739.00      C*
740.00      CSR          *IN99      IFBQ '0'
741.00      CSR          *IN99      ANDRQ '0'
742.00      CSR          *IN99      EXCTUNLOCK
743.00      CSR          *IN99      END
744.00      C*
745.00      C*      If errors, skip remainder of subroutine.
746.00      C*
747.00      CSR          *IN99      CASEQ '1'          END0003
748.00      C*          -----
749.00      C*
750.00      C*
751.00      C*      Move data base information to video screen.
752.00      C*
753.00      CSR          *IN99      EXER S004
754.00      C*          -----
755.00      C*
756.00      CSR          END0003      END
757.00      C*          -----
758.00      C*
759.00      C*      Copy Common Subroutine - Right Justify Numeric Fields
760.00      C*
761.00      C/COPY JDECOPY,C0012
762.00      C*          -----
763.00      C*
764.00      C*      SUBROUTINE S004 - Load Video Screen Data
765.00      C*          -----
766.00      C*
767.00      C*      Processing: 1. Move data base information to video screen.
768.00      C*      All video screen fields are alpha and
769.00      C*      therefore numeric information must be
770.00      C*      processed through subroutine C0014 to set
771.00      C*      proper decimals and provide editing for
772.00      C*      display on screen
773.00      C*
774.00      C*      Date fields must be converted from their
775.00      C*      internal format of month, day and year or
776.00      C*      julian to the system format using program
777.00      C*      X0029

```

JDE uses this or SETLL to release record locks

Moves information to the video/report fields

Figure 23-15 Maintenance Program without a Subfile (part 11)

779.00	C*					
779.00	CRR	8004	8008			
780.00	C*	----	-----			
781.00	C*					
782.00	C*					
782.00	C*	Move to output - Description for Cost Center				
784.00	C*					
785.00	CRR			CALL 'X0005'	81	
786.00	C*					
787.00	CRR			FARM *BLANK	PGCMOD 1	Server for Bus. Unit
788.00	CRR			FARM '1'	PGIMOD 1	
789.00	CRR			FARM QXACC	PGMCO 12	
790.00	CRR			FARM *BLANK	PERRRM 4	
791.00	CRR			FARM	10000	
792.00	C*					
793.00	CRR			MOVE *BLANK	VCO001	Description loaded to the *VCO field
794.00	CRR	8008		IFRD *BLANK		
795.00	CRR			MOVE *BLANK	VCO001	
796.00	CRR			MOVE *BLANK	VCO001	
797.00	C*					
798.00	C*					
799.00	C*	Description display for - Item Type				
800.00	C*					
801.00	CRR			CLEAR I000SU		File server for user defined codes
802.00	CRR			MOVE *BLANK	WURY	
803.00	CRR			MOVE *BLANK	WURY	
804.00	CRR			MOVE QXXTY	WURY	
805.00	CRR			CALL 'X0005'		81
806.00	C*					
807.00	CRR			FARM	I000SU	
808.00	CRR			MOVE *BLANK	VCO002	
809.00	CRR	#0000		IFRD '0'		
810.00	CRR			MOVE *BLANK	VCO002	
811.00	CRR			MOVE *BLANK	VCO002	
812.00	C*					
813.00	C*					
814.00	C*	Description display for - Item Unit of Measure				
815.00	C*					
816.00	CRR			CLEAR I000SU		81
817.00	CRR			MOVE *BLANK	WURY	
818.00	CRR			MOVE *BLANK	WURY	
819.00	CRR			MOVE QXNUM	WURY	
820.00	CRR			CALL 'X0005'		81
821.00	C*					
822.00	CRR			FARM	I000SU	
823.00	CRR			MOVE *BLANK	VCO003	
824.00	CRR	#0000		IFRD '0'		
825.00	CRR			MOVE *BLANK	VCO003	
826.00	CRR			MOVE *BLANK	VCO003	
827.00	C*					
828.00	C*					
829.00	C*					
830.00	C*	Description display for - Item Category Code 001				
831.00	CRR			CLEAR I000SU		81
832.00	CRR			MOVE *BLANK	WURY	
833.00	CRR			MOVE *BLANK	WURY	
834.00	CRR			MOVE QXK001	WURY	
835.00	CRR			CALL 'X0005'		81
836.00	C*					
837.00	CRR			FARM	I000SU	
838.00	CRR			MOVE *BLANK	VCO004	
839.00	CRR	#0000		IFRD '0'		
840.00	CRR			MOVE *BLANK	VCO004	
841.00	CRR			MOVE *BLANK	VCO004	
842.00	C*					
843.00	C*					
844.00	C*	Description display for - Item Category Code 002				
845.00	C*					
846.00	CRR			CLEAR I000SU		81
847.00	CRR			MOVE *BLANK	WURY	
848.00	CRR			MOVE *BLANK	WURY	
849.00	CRR			MOVE QXK002	WURY	
850.00	CRR			CALL 'X0005'		81
851.00	C*					
852.00	CRR			FARM	I000SU	
853.00	CRR			MOVE *BLANK	VCO005	
854.00	CRR	#0000		IFRD '0'		

Figure 23-16 Maintenance Program without a Subfile (part 12)

```

855.00 CBR          NOVEL#UCL01          VC0005
856.00 CBR          END
857.00 C*
858.00 C*
859.00 C*      Description display for - Item Category Code 003
860.00 C*
861.00 CBR          CLEARI0000SU
862.00 CBR          NOVEL#GX003          MUST
863.00 CBR          MOVE #GX003          MUST
864.00 CBR          MOVE #GX003          MUST
865.00 CBR          CALL 'X0005'          01
866.00 C*
867.00 CBR          PARM
868.00 CBR          MOVE 'BLANK          I0000SU
869.00 CBR          IFREQ '0'          VC0006
870.00 CBR          NOVEL#UCL01          VC0006
871.00 CBR          END
872.00 C*
873.00 C*
874.00 C*      Description display for - Item Category Code 004
875.00 C*
876.00 CBR          CLEARI0000SU
877.00 CBR          NOVEL#GX004          MUST
878.00 CBR          MOVE #GX004          MUST
879.00 CBR          MOVE #GX004          MUST
880.00 CBR          CALL 'X0005'          01
881.00 C*
882.00 CBR          PARM
883.00 CBR          MOVE 'BLANK          I0000SU
884.00 CBR          IFREQ '0'          VC0007
885.00 CBR          NOVEL#UCL01          VC0007
886.00 CBR          END
887.00 C*
888.00 C*
889.00 C*      Description display for - Item Category Code 005
890.00 C*
891.00 CBR          CLEARI0000SU
892.00 CBR          NOVEL#GX005          MUST
893.00 CBR          MOVE #GX005          MUST
894.00 CBR          MOVE #GX005          MUST
895.00 CBR          CALL 'X0005'          01
896.00 C*
897.00 CBR          PARM
898.00 CBR          MOVE 'BLANK          I0000SU
899.00 CBR          IFREQ '0'          VC0008
900.00 CBR          NOVEL#UCL01          VC0008
901.00 CBR          END
902.00 C*
903.00 C*
904.00 C*      Move to output - Cost Center
905.00 C*
906.00 CBR          MOVE #BLANK          #SINR
907.00 CBR          NOVEL#GX00C          #SINR
908.00 CBR          MOVE #GX00C          MUST
909.00 CBR          MOVE #GX00C          #ENRD
910.00 CBR          MOVE #GX00C          #EC
911.00 CBR          MOVE #GX00C          #DOPD
912.00 CBR          MOVE #GX00C          #DAPD
913.00 CBR          MOVE #GX00C          #ALB
914.00 CBR          MOVE ' '          #ECOR
915.00 CBR          MOVE ' '          #ECOR
916.00 CBR          #SINR C00161
917.00 C*
918.00 CBR          #ALB
919.00 CBR          IFREQ 'L'          VC000C
920.00 CBR          NOVEL#SINR          VC000C
921.00 CBR          #SINR          VC000C
922.00 CBR          END
923.00 C*
924.00 C*
925.00 C*      Move to output - Description
926.00 C*
927.00 CBR          NOVEL#GX00G          VC000G
928.00 C*
929.00 C*
930.00 C*      Move to Output - Date Last Ship
931.00 C*

```

Editing information retrieved in S998

Copy module to edit field for use on screen/report

Figure 23-17 Maintenance Program without a Subfile (part 13)

922.00	CRR	MOVE QXNDT	#GIDAT 4	
923.00	CRR	MOVE *BLANK	#EDAT 8	
924.00	CRR	MOVE *JUL	#FFMT 7	
925.00	CRR	MOVE *SYVAL	#STMT 7	
926.00	CRR	MOVE *SYVAL	#SEP 7	
927.00	CRR	MOVE ' '	#STST 1	
928.00	CRR	CALL 'X0028'	SI	External program used to edit dates
929.00	C*	-----		
940.00	CRR	PARM	#GIDAT	
941.00	CRR	PARM	#EDAT	
942.00	CRR	PARM	#FFMT	
943.00	CRR	PARM	#STMT	
944.00	CRR	PARM	#SEP	
945.00	CRR	PARM	#STST	
946.00	CRR	MOVE #EDAT	VENDT	
947.00	C*	-----		
948.00	C*	Move to output - Item ID		
949.00	C*			
950.00	C*			
951.00	CRR	MOVE *BLANK	#GNGR	
952.00	CRR	MOVE QXNDT	#GNGR	
953.00	CRR	MOVE TXNDT	#DTYP	
954.00	CRR	MOVE #XNDT	#ENRD	
955.00	CRR	MOVE #XNDT	#EC	
956.00	CRR	MOVE #XNDT	#DSD	
957.00	CRR	MOVE QXNDT	#DSD	
958.00	CRR	MOVE JXNDT	#ALA	
959.00	CRR	MOVE ' '	#ECOR	
960.00	CRR	MOVE ' '	#ECOR	
961.00	CRR	EXER C00101		
962.00	C*	-----		
963.00	CRR	#ALA IFDQ 'L'		
964.00	CRR	MOVE #GNGR	VENDT	
965.00	CRR	ELSE		
966.00	CRR	MOVE #GNGR	VENDT	
967.00	CRR	END		
968.00	C*	-----		
969.00	C*			
970.00	C*	Move to output - Quantity - On Hand		
971.00	C*			
972.00	CRR	MOVE *BLANK	#GNGR	
973.00	CRR	MOVE QXNDT	#GNGR	
974.00	CRR	MOVE TXNDT	#DTYP	
975.00	CRR	MOVE #XNDT	#ENRD	
976.00	CRR	MOVE #XNDT	#EC	
977.00	CRR	MOVE #XNDT	#DSD	
978.00	CRR	MOVE QXNDT	#DSD	
979.00	CRR	MOVE JXNDT	#ALA	
980.00	CRR	MOVE ' '	#ECOR	
981.00	CRR	MOVE ' '	#ECOR	
982.00	CRR	EXER C00101		
983.00	C*	-----		
984.00	CRR	#ALA IFDQ 'L'		
985.00	CRR	MOVE #GNGR	VENDT	
986.00	CRR	ELSE		
987.00	CRR	MOVE #GNGR	VENDT	
988.00	CRR	END		
989.00	C*	-----		
990.00	C*			
991.00	C*	Move to output - Item type		
992.00	C*			
993.00	CRR	MOVE QXNDT	VENDT	
994.00	C*	-----		
995.00	C*			
996.00	C*	Move to output - Item Unit of Measure		
997.00	C*			
998.00	CRR	MOVE QXNDT	VENDT	
999.00	C*	-----		
1000.00	C*			
1001.00	C*	Move to output - Item Category Code 001		
1002.00	C*			
1003.00	C*	MOVE *BLANK	#GNGR	
1004.00	C*	MOVE QXNDT	#GNGR	
1005.00	C*	MOVE TXNDT	#DTYP	
1006.00	C*	MOVE #XNDT	#ENRD	
1007.00	C*	MOVE #XNDT	#EC	
1008.00	C*	MOVE QXNDT	#DSD	

Figure 23-18 Maintenance Program without a Subfile (part 14)

```

1010.00 CDE          MOVE JMX001      #ALR
1011.00 CDE          MOVE ' '        #SCOR
1012.00 CDE          MOVE ' '        #SCOR
1013.00 CDE          EXGR C00161
1014.00 C*          -----
1015.00 CDE          #ALR          IFRD 'L'
1016.00 CDE          MOVE#SINER      VEX001
1017.00 CDE          ELGR
1018.00 CDE          MOVE #SINER      VEX001
1019.00 CDE          END
1020.00 C*          -----
1021.00 C*          Move to output - Item Category Code 002
1022.00 C*
1023.00 C*
1024.00 CDE          MOVE *BLANK      #SINR
1025.00 CDE          MOVE#JXX002      #SINR
1026.00 CDE          MOVE TXK002      #CTYP
1027.00 CDE          MOVE MAX002      #WRD
1028.00 CDE          MOVE SXX002      #EC
1029.00 CDE          MOVE PXX002      #GSPD
1030.00 CDE          MOVE GXX002      #DSTD
1031.00 CDE          MOVE JXX002      #ALR
1032.00 CDE          MOVE ' '        #SCOR
1033.00 CDE          MOVE ' '        #SCOR
1034.00 CDE          EXGR C00161
1035.00 C*          -----
1036.00 CDE          #ALR          IFRD 'L'
1037.00 CDE          MOVE#SINER      VEX002
1038.00 CDE          ELGR
1039.00 CDE          MOVE #SINER      VEX002
1040.00 CDE          END
1041.00 C*          -----
1042.00 C*          Move to output - Item Category Code 003
1043.00 C*
1044.00 C*
1045.00 CDE          MOVE *BLANK      #SINR
1046.00 CDE          MOVE#JXX003      #SINR
1047.00 CDE          MOVE TXK003      #CTYP
1048.00 CDE          MOVE MAX003      #WRD
1049.00 CDE          MOVE SXX003      #EC
1050.00 CDE          MOVE PXX003      #GSPD
1051.00 CDE          MOVE GXX003      #DSTD
1052.00 CDE          MOVE JXX003      #ALR
1053.00 CDE          MOVE ' '        #SCOR
1054.00 CDE          MOVE ' '        #SCOR
1055.00 CDE          EXGR C00161
1056.00 C*          -----
1057.00 CDE          #ALR          IFRD 'L'
1058.00 CDE          MOVE#SINER      VEX003
1059.00 CDE          ELGR
1060.00 CDE          MOVE #SINER      VEX003
1061.00 CDE          END
1062.00 C*          -----
1063.00 C*          Move to output - Item Category Code 004
1064.00 C*
1065.00 C*
1066.00 CDE          MOVE *BLANK      #SINR
1067.00 CDE          MOVE#JXX004      #SINR
1068.00 CDE          MOVE TXK004      #CTYP
1069.00 CDE          MOVE MAX004      #WRD
1070.00 CDE          MOVE SXX004      #EC
1071.00 CDE          MOVE PXX004      #GSPD
1072.00 CDE          MOVE GXX004      #DSTD
1073.00 CDE          MOVE JXX004      #ALR
1074.00 CDE          MOVE ' '        #SCOR
1075.00 CDE          MOVE ' '        #SCOR
1076.00 CDE          EXGR C00161
1077.00 C*          -----
1078.00 CDE          #ALR          IFRD 'L'
1079.00 CDE          MOVE#SINER      VEX004
1080.00 CDE          ELGR
1081.00 CDE          MOVE #SINER      VEX004
1082.00 CDE          END
1083.00 C*          -----
1084.00 C*          Move to output - Item Category Code 005
1085.00 C*
1086.00 C*

```

Figure 23-19 Maintenance Program without a Subfile (part 15)

```

1097.00  CBR          MOVE *SLAKE          #SINER
1098.00  CBR          MOVE QXK005          #SINER
1099.00  CBR          MOVE TXX005          #OTYP
1100.00  CBR          MOVE MXX005          #ENRD
1101.00  CBR          MOVE SXX005          #EC
1102.00  CBR          MOVE PXX005          #CGPD
1103.00  CBR          MOVE GXX005          #CATE
1104.00  CBR          MOVE JXX005          #ALS
1105.00  CBR          MOVE ' '            #ECOR
1106.00  CBR          MOVE ' '            #CCOR
1107.00  CBR          EXER C00161
1108.00  CBR          -----
1109.00  CBR          #ALS          IFBQ 'L'
1110.00  CBR          MOVE #SINER          VOM005
1111.00  CBR          ELER
1112.00  CBR          MOVE #SINER          VOM005
1113.00  CBR          END
1114.00  CBR          -----
1115.00  CBR          END004          ENDSR
1116.00  CBR          -----
1117.00  CBR          C* Copy Common Subroutine - Format Numeric Fields for Output with Override
1118.00  CBR          C*
1119.00  CBR          C/COPY JUSCOPY,C00161
1120.00  CBR          -----
1121.00  CBR          C* SUBROUTINE S005 - Scrub Input          Validates and edits data
1122.00  CBR          C*                                     entered by the user
1123.00  CBR          C*
1124.00  CBR          Processing: 1. Validate all video input.
1125.00  CBR          All numeric fields must be processed
1126.00  CBR          thru subroutines C0012 and C0015 in order
1127.00  CBR          to scrub the alpha input field and convert
1128.00  CBR          15 digits and 0 decimals.
1129.00  CBR          Date fields must be converted from system
1130.00  CBR          format to their internal format of month,
1131.00  CBR          day and year or julian using program N0029.
1132.00  CBR          2. Update data record fields from video.
1133.00  CBR          S005          ENDSR
1134.00  CBR          -----
1135.00  CBR          C* If not addition or change, bypass subroutine.
1136.00  CBR          C*
1137.00  CBR          *IN21          IFBQ '0'
1138.00  CBR          *IN22          ANDRQ '0'
1139.00  CBR          GOTO END005
1140.00  CBR          -----
1141.00  CBR          END
1142.00  CBR          -----
1143.00  CBR          C* Scrub and edit - Cost Center
1144.00  CBR          C*
1145.00  CBR          CALL 'X0006'          99
1146.00  CBR          -----
1147.00  CBR          PARM '1'          PGOMCD 1
1148.00  CBR          PARM ' '          PGIMCD 1
1149.00  CBR          PARM VOMCC          PGMCU 12
1150.00  CBR          PARM *SLAKE          PSERRM 4
1151.00  CBR          PARM          I0006
1152.00  CBR          C*
1153.00  CBR          PSERRM          IFBQ *SLAKE          4222
1154.00  CBR          GETOR
1155.00  CBR          MOVE PSERRM          SMK,10
1156.00  CBR          MOVE '1'          SMK,10
1157.00  CBR          END
1158.00  CBR          MOVE PGMCU          QXKCC
1159.00  CBR          -----
1160.00  CBR          C* Scrub and edit - Description
1161.00  CBR          C*
1162.00  CBR          MOVE VOMDS          QXKDS
1163.00  CBR          C* Set default value - Description
1164.00  CBR          C*

```

Figure 23-20 Maintenance Program without a Subfile (part 16)

```

1165.00 CSR      QXXDS      IFPG *SLAVE
1166.00 CSR      DXXDS      IFPG *SLAVE
1167.00 CSR      MOVDS      MOVDSADDS      @DV
1168.00 CSR      @DV,1      IFPG
1169.00 CSR      MOVDS      MOVDSADDS      @DV,1
1170.00 CSR      @DV,1      IFPG
1171.00 CSR      MOVDS      MOVDSADDS      @DV,1
1172.00 CSR      @DV,1      IFPG
1173.00 CSR      @DV,1      IFPG
1174.00 CSR      @DV,1      IFPG
1175.00 CSR      @DV,1      IFPG
1176.00 CSR      @DV,1      IFPG
1177.00 CSR      @DV,1      IFPG
1178.00 CSR      @DV,1      IFPG
1179.00 CSR      @DV,1      IFPG
1180.00 CSR      @DV,1      IFPG
1181.00 CSR      @DV,1      IFPG
1182.00 CSR      @DV,1      IFPG
1183.00 C*      Edit allowed values - Description
1184.00 C*
1185.00 CSR      @XXDS      IFPG *SLAVE
1186.00 CSR      @XXDS      MOVDSADDS      @XX,03      4293
1187.00 CSR      @XXDS      MOVDSADDS      @XX,03      4293
1188.00 CSR      @XXDS      MOVDSADDS      @XX,03      4293
1189.00 CSR      @XXDS      MOVDSADDS      @XX,03      4293
1190.00 C*
1191.00 C*      Scrub and edit - Date Last Ship
1192.00 C*
1193.00 C*
1194.00 CSR      MOVDSADDS      @XX,03      4293
1195.00 CSR      MOVDSADDS      @XX,03      4293
1196.00 C*
1197.00 CSR      @XXDS      IFPG *SLAVE
1198.00 CSR      @XXDS      MOVDSADDS      @XX,03      4293
1199.00 C*
1200.00 C*      Edit julian date - Date Last Ship
1201.00 C*
1202.00 CSR      VXXDS      IFPG *SLAVE
1203.00 CSR      MOVDSADDS      @XX,03      4293
1204.00 CSR      MOVDSADDS      @XX,03      4293
1205.00 CSR      MOVDSADDS      @XX,03      4293
1206.00 CSR      MOVDSADDS      @XX,03      4293
1207.00 CSR      MOVDSADDS      @XX,03      4293
1208.00 CSR      MOVDSADDS      @XX,03      4293
1209.00 CSR      MOVDSADDS      @XX,03      4293
1210.00 C*
1211.00 CSR      FXXDS      IFPG *SLAVE
1212.00 CSR      MOVDSADDS      @XX,03      4293
1213.00 CSR      MOVDSADDS      @XX,03      4293
1214.00 CSR      MOVDSADDS      @XX,03      4293
1215.00 CSR      MOVDSADDS      @XX,03      4293
1216.00 CSR      MOVDSADDS      @XX,03      4293
1217.00 CSR      MOVDSADDS      @XX,03      4293
1218.00 CSR      MOVDSADDS      @XX,03      4293
1219.00 CSR      MOVDSADDS      @XX,03      4293
1220.00 CSR      MOVDSADDS      @XX,03      4293
1221.00 CSR      MOVDSADDS      @XX,03      4293
1222.00 CSR      MOVDSADDS      @XX,03      4293
1223.00 C*
1224.00 C*      Scrub and edit - Item ID
1225.00 C*
1226.00 C*
1227.00 CSR      MOVDSADDS      @XX,03      4293
1228.00 CSR      MOVDSADDS      @XX,03      4293
1229.00 C*
1230.00 CSR      MOVDSADDS      @XX,03      4293
1231.00 CSR      MOVDSADDS      @XX,03      4293
1232.00 CSR      MOVDSADDS      @XX,03      4293
1233.00 C*
1234.00 CSR      MOVDSADDS      @XX,03      4293
1235.00 C*
1236.00 C*      Set default value - Item ID
1237.00 C*
1238.00 CSR      VXXDS      IFPG *SLAVE
1239.00 CSR      MOVDSADDS      @XX,03      4293
1240.00 CSR      MOVDSADDS      @XX,03      4293
1241.00 CSR      MOVDSADDS      @XX,03      4293

```

Common subroutine to convert screen fields to numeric data

Work fields used in the RPG program begin with \$

Work fields used in a copy module begin with #

Convert to numeric

Adjust for display decimals

Figure 23-21 Maintenance Program without a Subfile (part 17)

```

1242.00 C*          -----
1243.00 CSR          MOVE PAXIT          WDGPD
1244.00 CSR          MOVE GAXIT          WDATD
1245.00 CSR          EXAR C00151
1246.00 C*          -----
1247.00 CSR          MOVE #NUMBER          QXKIT
1248.00 CSR          END
1249.00 C*
1250.00 C*      Edit upper and lower range - Item ID
1251.00 C*
1252.00 CSR          LAXIT          IPNR *BLANK
1253.00 CSR          MOVE *BLANK          XAXIT 15
1254.00 CSR          MOVE '1'          SERTST
1255.00 CSR          MOVE QXKIT          XAXIT
1256.00 CSR          XAXIT          IPNR LAXIT
1257.00 CSR          XAXIT          ANDLUNXIT
1258.00 CSR          MOVE ' '          SERTST
1259.00 CSR          END
1260.00 CSR          SERTST          IPNR '1'
1261.00 CSR          MOVE '1'          QMX,07
1262.00 CSR          SETON
1263.00 CSR          END
1264.00 CSR          END
1265.00 C*-----
1266.00 C*
1267.00 C*      Scrub and edit - Quantity - on Hand
1268.00 C*
1269.00 CSR          MOVE VAXQT          QHM
1270.00 CSR          EXAR C0012
1271.00 C*          -----
1272.00 CSR          MOVE PAXQT          WDGPD
1273.00 CSR          MOVE GAXQT          WDATD
1274.00 CSR          EXAR C00151
1275.00 C*          -----
1276.00 CSR          MOVE #NUMBER          QXQQT
1277.00 C*
1278.00 C*      Set default value - Quantity - On Hand
1279.00 C*
1280.00 CSR          VAXQT          IPNR *BLANK
1281.00 CSR          DAXQT          APNR *BLANK
1282.00 CSR          MOVE VAXQT          QHM
1283.00 CSR          EXAR C0012
1284.00 C*          -----
1285.00 CSR          MOVE PAXQT          WDGPD
1286.00 CSR          MOVE GAXQT          WDATD
1287.00 CSR          EXAR C00151
1288.00 C*          -----
1289.00 CSR          MOVE #NUMBER          QXQQT
1290.00 CSR          END
1291.00 C*
1292.00 C*      Edit upper and lower range - Quantity - On Hand
1293.00 C*
1294.00 CSR          LAXQT          IPNR *BLANK
1295.00 CSR          MOVE *BLANK          XAXQT 15
1296.00 CSR          MOVE '1'          SERTST 1
1297.00 CSR          MOVE QXQQT          XAXQT
1298.00 CSR          XAXQT          IPNR LAXQT
1299.00 CSR          XAXQT          ANDLUNXQT
1300.00 CSR          MOVE ' '          SERTST
1301.00 CSR          END
1302.00 CSR          SERTST          IPNR '1'
1303.00 CSR          MOVE '1'          QMX,07
1304.00 CSR          SETON
1305.00 CSR          END
1306.00 CSR          END
1307.00 C*-----
1308.00 C*
1309.00 C*      Scrub and edit - Item Type
1310.00 C*
1311.00 CSR          MOVE VAXTY          QXXTY
1312.00 C*
1313.00 C*      Set default value - Item Type
1314.00 C*
1315.00 CSR          QXXTY          IPNR *BLANK
1316.00 CSR          DAXTY          IPNR *BLANK
1317.00 CSR          MOVE VAXTY          Q40
1318.00 CSR          MOVE W40          QXXTY

```

Default value from Data Dictionary

Upper and lower ranges from Data Dictionary

Figure 23-22 Maintenance Program without a Subfile (part 18)

```

1319.00 CGM      @40,1  IPFQ ' ' ' '
1320.00 CGM      MOVE ' ' ' '      @40,1
1321.00 CGM      L-ADD2      RM
1322.00 CGM      RM      DOBLE40
1323.00 CGM      @40,RM      IPFQ ' ' ' '
1324.00 CGM      MOVE ' ' ' '      @40,RM
1325.00 CGM      END
1326.00 CGM      ADD 1      RM
1327.00 CGM      END
1328.00 CGM      MOVE@40,2      QXNTY
1329.00 CGM      END
1330.00 CGM      END
1331.00 CGM      END
1332.00 C*
1333.00 C*      Edit allowed values - Item Type
1334.00 C*
1335.00 CGM      AXNTY      IPFQ *BLANK
1336.00 CGM      AXNTY      IPFQ *RM
1337.00 CGM      QXNTY      AND@Q*BLANK
1338.00 CGP      MOVE '1'      @MX,02      4492
1339.00 CGM      SETON
1340.00 CGM      ELSE
1341.00 CGM      MOVE@AXNTY      @40
1342.00 CGM      MOVE *RIVAL      @AV
1343.00 CGM      EDGE CPST
1344.00 C*
1345.00 CGM      MOVE ' ' ' '      @ENTGT 1
1346.00 CGM      MOVE *BLANK      @ENTGT 10
1347.00 CGM      MOVE@QXNTY      @ENTGT 10
1348.00 CGM      @AV,1      IPFQ *RIVAL
1349.00 CGM      @ENTGT      LOU@AV      91
1350.00 CGM      *ENTGT      IPFQ '0'
1351.00 CGM      MOVE '1'      @ENTGT
1352.00 CGM      END
1353.00 CGM      @ENTGT      IPFQ '1'
1354.00 CGM      MOVE '1'      @MX,07      4492
1355.00 CGM      SETON
1356.00 CGM      END
1357.00 CGM      END
1358.00 CGM      END
1359.00 CGM      END
1360.00 C*
1361.00 C*      Edit upper and lower range - Item Type
1362.00 C*
1363.00 CGM      LAXTY      IPFQ *BLANK
1364.00 CGM      MOVE '1'      @ENTGT
1365.00 CGM      QXNTY      IPFQ LAXTY
1366.00 CGM      QXNTY      AND@LAXTY
1367.00 CGM      MOVE ' ' ' '      @ENTGT
1368.00 CGM      END
1369.00 CGM      @ENTGT      IPFQ '1'
1370.00 CGM      MOVE '1'      @MX,07      4492
1371.00 CGM      SETON
1372.00 CGM      END
1373.00 CGM      END
1374.00 C*
1375.00 C*      Edit from User Defined Codes - Item Type
1376.00 C*
1377.00 CGM      RAXTY      IPFQ *BLANK
1378.00 CGM      CLEAR10005U
1379.00 CGM      MOVE@RAXTY      @UNT
1380.00 CGM      MOVE RAXTY      @UNT
1381.00 CGM      MOVE QXNTY      @UNT
1382.00 CGM      CALL 'X0005'      91
1383.00 C*
1384.00 CGM      FARM      10005U
1385.00 CGM      @UNT      IPFQ '1'
1386.00 CGM      MOVE '1'      @MX,09      4492
1387.00 CGM      SETON
1388.00 CGM      END
1389.00 CGM      END
1390.00 C*
1391.00 C*
1392.00 C*      Scrub and edit - Item Unit of Measure
1393.00 C*
1394.00 CGM      MOVE@VOLUME      @XNUM
1395.00 C*

```


Figure 23-23 Maintenance Program without a Subfile (part 19)

```

1396.00 C*      Set default value - Item Unit of Measure
1397.00 C*
1398.00 CGR      QXXUM      IFNE 'BLANK'
1399.00 CGR      BAXUM      IFNE 'BLANK'
1400.00 CGR      BAXUM      MOVE BAXUM      @40
1401.00 CGR      MOVE @40      QXXUM
1402.00 CGR      @40,1      IFEQ '1'
1403.00 CGR      MOVE ' '      @40,1
1404.00 CGR      E-ADD2      WM
1405.00 CGR      @M      DOUBLE @40
1406.00 CGR      @40,WM      IFEQ '1'
1407.00 CGR      MOVE ' '      @40,WM
1408.00 CGR      END
1409.00 CGR      ADD 1      WM
1410.00 CGR      END
1411.00 CGR      MOVE @40,2      QXXUM
1412.00 CGR      END
1413.00 CGR      END
1414.00 CGR      END
1415.00 C*
1416.00 C*      Edit allowed values - Item Unit of Measure
1417.00 C*
1418.00 CGR      AXXUM      IFNE 'BLANK'
1419.00 CGR      AXXUM      IFEQ 'WM'
1420.00 CGR      QXXUM      ANDEQ 'BLANK'
1421.00 CGR      MOVE '1'      QMX,03
1422.00 CGR      SETON      4792
1423.00 CGR      ELSE
1424.00 CGR      MOVE BAXUM      @40
1425.00 CGR      MOVE 'RIVAL'      @AV
1426.00 CGR      EXGE C997
1427.00 C*      -----
1428.00 CGR      MOVE ' '      SETEST 1
1429.00 CGR      MOVE 'BLANK'      SWX10 10
1430.00 CGR      MOVE QXXUM      SWX10
1431.00 CGR      @AV,1      IFNE 'RIVAL'
1432.00 CGR      SWX10      LOGUP @AV      91
1433.00 CGR      'INQ1      IFEQ '0'
1434.00 CGR      MOVE '1'      SETEST
1435.00 CGR      END
1436.00 CGR      SETEST      IFEQ '1'
1437.00 CGR      MOVE '1'      QMX,07
1438.00 CGR      SETON      4792
1439.00 CGR      END
1440.00 CGR      END
1441.00 CGR      END
1442.00 CGR      END
1443.00 C*
1444.00 C*      Edit upper and lower range - Item Unit of Measure
1445.00 C*
1446.00 CGR      LAXUM      IFNE 'BLANK'
1447.00 CGR      MOVE '1'      SETEST
1448.00 CGR      QXXUM      IFNE LAXUM
1449.00 CGR      QXXUM      ANDLE BAXUM
1450.00 CGR      MOVE ' '      SETEST
1451.00 CGR      END
1452.00 CGR      SETEST      IFEQ '1'
1453.00 CGR      MOVE '1'      QMX,07
1454.00 CGR      SETON      4792
1455.00 CGR      END
1456.00 CGR      END
1457.00 C*
1458.00 C*      Edit from User Defined Codes - Item Unit of Measure
1459.00 C*
1460.00 CGR      BAXUM      IFNE 'BLANK'
1461.00 CGR      CLEAR10000
1462.00 CGR      MOVE BAXUM      WUXY
1463.00 CGR      MOVE BAXUM      WUXY
1464.00 CGR      MOVE QXXUM      WUXY
1465.00 CGR      CALL 'X0005'      91
1466.00 C*      -----
1467.00 CGR      BAXUM      CLEAR10000
1468.00 CGR      WUXY      IFEQ '1'
1469.00 CGR      MOVE '1'      QMX,09
1470.00 CGR      SETON      4792
1471.00 CGR      END
1472.00 CGR      END

```

Figure 23-24 Maintenance Program without a Subfile (part 20)

```

1473.00 C*-----
1474.00 C*
1475.00 C*      Scrub and edit - Item Category Code 001
1476.00 C*
1477.00 CSM      MOVELV0X001      QXX001
1478.00 C*
1479.00 C*      Set default value - Item Category Code 001
1480.00 C*
1481.00 CSM      QXX001      IFNE 'BLANK'
1482.00 CSM      DAX001      IFNE 'BLANK'
1483.00 CSM      MOVESDAX001      @40
1484.00 CSM      MOVAS@40      QXX001
1485.00 CSM      @40,1      IFEQ ' '
1486.00 CSM      MOVE ' '      @40,1
1487.00 CSM      Z-ADD2      NM
1488.00 CSM      NM      DOWLE@40
1489.00 CSM      @40,NM      IFEQ ' '
1490.00 CSM      MOVE ' '      @40,NM
1491.00 CSM      END
1492.00 CSM      ADD 1      NM
1493.00 CSM      END
1494.00 CSM      MOVES@40,2      QXX001
1495.00 CSM      END
1496.00 CSM      END
1497.00 CSM      END
1498.00 C*
1499.00 C*      Edit allowed values - Item Category Code 001
1500.00 C*
1501.00 CSM      AXX001      IFNE 'BLANK'
1502.00 CSM      AXX001      IFNE 'NM'
1503.00 CSM      QXX001      ANDQ'BLANK'
1504.00 CSM      MOVE '1'      @MX,02
1505.00 CSM      SETON      4993
1506.00 CSM      ELSE
1507.00 CSM      MOVESAXX001      @40
1508.00 CSM      MOVE 'RIVAL'      @AV
1509.00 CSM      DOGE C997
1510.00 C*      ----
1511.00 CSM      MOVE ' '      @ENTST 1
1512.00 CSM      MOVE 'BLANK'      @NKL0 10
1513.00 CSM      MOVELQXX001      @NKL0
1514.00 CSM      @AV,1      IFNE 'RIVAL'
1515.00 CSM      @NKL0      LOWUP@AV      01
1516.00 CSM      'IN91      IFEQ '0'
1517.00 CSM      MOVE '1'      @ENTST
1518.00 CSM      END
1519.00 CSM      @ENTST      IFEQ '1'
1520.00 CSM      MOVE '1'      @MX,07
1521.00 CSM      SETON      4993
1522.00 CSM      END
1523.00 CSM      END
1524.00 CSM      END
1525.00 CSM      END
1526.00 C*
1527.00 C*      Edit upper and lower range - Item Category Code 001
1528.00 C*
1529.00 CSM      LAX001      IFNE 'BLANK'
1530.00 CSM      MOVE '1'      @ENTST
1531.00 CSM      QXX001      IFNE LAX001
1532.00 CSM      QXX001      ANDLHUX001
1533.00 CSM      MOVE ' '      @ENTST
1534.00 CSM      END
1535.00 CSM      @ENTST      IFEQ '1'
1536.00 CSM      MOVE '1'      @MX,07
1537.00 CSM      SETON      4993
1538.00 CSM      END
1539.00 CSM      END
1540.00 C*
1541.00 C*      Edit from User Defined Codes - Item Category Code 001
1542.00 C*
1543.00 CSM      RAX001      IFNE 'BLANK'
1544.00 CSM      CLEAR100000U
1545.00 CSM      MOVESRAX001      WUXY
1546.00 CSM      MOVE PAX002      WUXY
1547.00 CSM      MOVE QXX001      WUXY
1548.00 CSM      CALL 'X0005'      01
1549.00 C*      ----

```

Figure 23-25 Maintenance Program without a Subfile (part 21)

```

1550.00 CSR      #USER      FARM      100000
1551.00 CSR      IFREQ '1'
1552.00 CSR      MOVE '1'      SMK,09
1553.00 CSR      SETON
1554.00 CSR      END
1555.00 CSR
1556.00 C*-----
1557.00 C*
1558.00 C*      Scrub and edit - Item Category Code 002
1559.00 C*
1560.00 CSR      MOVELVX002      QXX002
1561.00 C*
1562.00 C*      Set default value - Item Category Code 002
1563.00 C*
1564.00 CSR      QXX002      IFNE 'BLANK'
1565.00 CSR      IFNE 'BLANK'
1566.00 CSR      MOVESAX002      @40
1567.00 CSR      MOVES@40      QXX002
1568.00 CSR      @40,1      IFEQ ' '
1569.00 CSR      MOVE ' '      @40,1
1570.00 CSR      Z-ADD2      NM
1571.00 CSR      NM      DOWNS@40
1572.00 CSR      @40,NM      IFEQ ' '
1573.00 CSR      MOVE ' '      @40,NM
1574.00 CSR      END
1575.00 CSR      ADD 1      NM
1576.00 CSR      END
1577.00 CSR      MOVES@40,2      QXX002
1578.00 CSR      END
1579.00 CSR      END
1580.00 CSR      END
1581.00 C*
1582.00 C*      Edit allowed values - Item Category Code 002
1583.00 C*
1584.00 CSR      AX002      IFNE 'BLANK'
1585.00 CSR      AX002      IFEQ 'NM'
1586.00 CSR      QXX002      ANDQ'BLANK'
1587.00 CSR      MOVE '1'      SMK,02
1588.00 CSR      SETON
1589.00 CSR      ELSE
1590.00 CSR      MOVESAX002      @40
1591.00 CSR      MOVE 'RIVAL'      @AV
1592.00 CSR      EXAM C997
1593.00 C*      ----
1594.00 CSR      MOVE ' '      SERTST
1595.00 CSR      MOVE 'BLANK'      SWSK10 10
1596.00 CSR      MOVELVX002      SWSK10
1597.00 CSR      @AV,1      IFNE 'RIVAL'
1598.00 CSR      SWSK10      LOCUS@AV
1599.00 CSR      *INQ1      IFEQ '0'
1600.00 CSR      MOVE '1'      SERTST
1601.00 CSR      END
1602.00 CSR      SERTST      IFEQ '1'
1603.00 CSR      MOVE '1'      SMK,07
1604.00 CSR      SETON
1605.00 CSR      END
1606.00 CSR      END
1607.00 CSR      END
1608.00 CSR      END
1609.00 C*
1610.00 C*      Edit upper and lower range - Item Category Code 002
1611.00 C*
1612.00 CSR      LAX002      IFNE 'BLANK'
1613.00 CSR      MOVE '1'      SERTST
1614.00 CSR      QXX002      IFNE LAX002
1615.00 CSR      QXX002      ANDLSUX002
1616.00 CSR      MOVE ' '      SERTST
1617.00 CSR      END
1618.00 CSR      SERTST      IFEQ '1'
1619.00 CSR      MOVE '1'      SMK,07
1620.00 CSR      SETON
1621.00 CSR      END
1622.00 CSR      END
1623.00 C*
1624.00 C*      Edit from User Defined Codes - Item Category Code 002
1625.00 C*
1626.00 CSR      AX002      IFNE 'BLANK'

```

Figure 23-26 Maintenance Program without a Subfile (part 22)

```

1627.00 CGR          CLEAR10005U
1628.00 CGR          MOVE L&X002      WUNT
1629.00 CGR          MOVE R&X002      WUNT
1630.00 CGR          MOVE QXX002      WUNT
1631.00 CGR          CALL 'X0005'      91
1632.00 C*          -----
1633.00 CGR          PARM              10005U
1634.00 CGR          IFBQ '1'          &MX,09
1635.00 CGR          MOVE '1'          &MX,09
1636.00 CGR          SETON              4993
1637.00 CGR          END
1638.00 CGR          END
1639.00 C*          -----
1640.00 C*
1641.00 C*      Scrub and edit - Item Category Code 003
1642.00 C*
1643.00 CGR          MOVE L&X002      QXX003
1644.00 C*
1645.00 C*      Set default value - Item Category Code 003
1646.00 C*
1647.00 CGR          QXX003 IFBQ 'BLANK'
1648.00 CGR          R&X003 IFBQ 'BLANK'
1649.00 CGR          MOVE R&X003      &40
1650.00 CGR          MOVE R&40        QXX003
1651.00 CGR          &40,1 IFBQ
1652.00 CGR          MOVE ' '          &40,1
1653.00 CGR          z-AND2              RM
1654.00 CGR          RM              DOBLE40
1655.00 CGR          &40,RM IFBQ ' '
1656.00 CGR          MOVE ' '          &40,RM
1657.00 CGR          END
1658.00 CGR          ADD 1              RM
1659.00 CGR          END
1660.00 CGR          MOVE R&40,2      QXX003
1661.00 CGR          END
1662.00 CGR          END
1663.00 CGR          END
1664.00 C*
1665.00 C*      Edit allowed values - Item Category Code 003
1666.00 C*
1667.00 CGR          R&X003 IFBQ 'BLANK'
1668.00 CGR          R&X003 IFBQ 'RM'
1669.00 CGR          QXX003 ANDCQ 'BLANK'
1670.00 CGR          MOVE '1'          &MX,03
1671.00 CGR          SETON              5093
1672.00 CGR          ELAR
1673.00 CGR          MOVE R&X003      &40
1674.00 CGR          MOVE 'HIVAL'     &4V
1675.00 CGR          EDGE C997
1676.00 C*          -----
1677.00 CGR          MOVE ' '          &RTST
1678.00 CGR          MOVE 'BLANK'     &P&10 10
1679.00 CGR          MOVE L&X002      &R&10
1680.00 CGR          &4V,1 IFBQ 'HIVAL'
1681.00 CGR          &R&10 LOU&P&4V      91
1682.00 CGR          'IN&1 IFBQ '0'
1683.00 CGR          MOVE '1'          &RTST
1684.00 CGR          END
1685.00 CGR          &RTST IFBQ '1'
1686.00 CGR          MOVE '1'          &MX,07
1687.00 CGR          SETON              5093
1688.00 CGR          END
1689.00 CGR          END
1690.00 CGR          END
1691.00 CGR          END
1692.00 C*
1693.00 C*      Edit upper and lower range - Item Category Code 003
1694.00 C*
1695.00 CGR          L&X003 IFBQ 'BLANK'
1696.00 CGR          MOVE '1'          &RTST
1697.00 CGR          QXX003 IFBQ L&X003
1698.00 CGR          QXX003 ANDC L&X003
1699.00 CGR          MOVE ' '
1700.00 CGR          END
1701.00 CGR          &RTST IFBQ '1'
1702.00 CGR          MOVE '1'          &MX,07
1703.00 CGR          SETON              5093

```

Figure 23-27 Maintenance Program without a Subfile (part 23)

```

1704.00 CGR      END
1705.00 CGR      END
1706.00 C*
1707.00 C*      Edit from User Defined Codes - Item Category Code 003
1708.00 C*
1709.00 CGR      RMX003      IFNR 'BLANK'
1710.00 CGR      CLEAR I0005U
1711.00 CGR      MOVEL RMX003      WWTY
1712.00 CGR      MOVE RMX003      WWTY
1713.00 CGR      MOVE QXX003      WWTY
1714.00 CGR      CALL 'X0005'
1715.00 C*
1716.00 CGR      DARM      I0005U
1717.00 CGR      #DZRM      IFNR '1'
1718.00 CGR      MOVE '1'      QMX,09
1719.00 CGR      GETON
1720.00 CGR      END
1721.00 CGR      END
1722.00 C*
-----
1723.00 Ct
1724.00 C*      Scrub and edit - Item Category Code 004
1725.00 C*
1726.00 CGR      MOVEL VNX004      QXX004
1727.00 C*
1728.00 Ct      Set default value - Item Category Code 004
1729.00 C*
1730.00 CGR      QXX004      IFNR 'BLANK'
1731.00 CGR      RMX004      IFNR 'BLANK'
1732.00 CGR      MOVEL VNX004      @40
1733.00 CGR      MOVEL RMX004      QXX004
1734.00 CGR      @40,1      IFNR ' '
1735.00 CGR      MOVE ' '      @40,1
1736.00 CGR      X-ADD @2
1737.00 CGR      RM      DOWLE @40
1738.00 CGR      @40, RM      IFNR ' '
1739.00 CGR      MOVE ' '      @40, RM
1740.00 CGR      END
1741.00 CGR      ADD 1      RM
1742.00 CGR      END
1743.00 CGR      MOVEL @40,2      QXX004
1744.00 CGR      END
1745.00 CGR      END
1746.00 CGR      END
1747.00 C*
1748.00 C*      Edit allowed values - Item Category Code 004
1749.00 C*
1750.00 CGR      RMX004      IFNR 'BLANK'
1751.00 CGR      RMX004      IFNR 'RB'
1752.00 CGR      QXX004      ANDQ 'BLANK'
1753.00 CGR      MOVE '1'      QMX,03
1754.00 CGR      GETON
1755.00 CGR      ELGR
1756.00 CGR      MOVEL RMX004      @40
1757.00 CGR      MOVE 'RIVAL'      @40
1758.00 CGR      EXGR C99T
1759.00 C*
1760.00 CGR      MOVE ' '      @RTST 1
1761.00 CGR      MOVE 'BLANK'      @RTST 10
1762.00 CGR      MOVEL QXX004      @RTST 10
1763.00 CGR      @40,1      IFNR 'RIVAL'
1764.00 CGR      @RTST 10      LORU @40
1765.00 CGR      *IN @2      IFNR '0'
1766.00 CGR      MOVE '1'      @RTST
1767.00 CGR      END
1768.00 CGR      @RTST      IFNR '1'
1769.00 CGR      MOVE '1'      QMX,07
1770.00 CGR      GETON
1771.00 CGR      END
1772.00 CGR      END
1773.00 CGR      END
1774.00 CGR      END
1775.00 C*
1776.00 C*      Edit upper and lower range - Item Category Code 004
1777.00 C*
1778.00 CGR      L@004      IFNR 'BLANK'
1779.00 CGR      MOVE '1'      @RTST
1780.00 CGR      QXX004      IFNR L@X004

```

Figure 23-28 Maintenance Program without a Subfile (part 24)

```

1791.00 CSR      QXX004  ANCLRUMX004
1792.00 CSR      MOVE ' '          SERTST
1793.00 CSR      END
1794.00 CSR      SERTST  IFBQ '1'
1795.00 CSR      MOVE '1'          SMK,07      5192
1796.00 CSR      SETON
1797.00 CSR      END
1798.00 CSR      END
1799.00 C*
1800.00 C*      Edit from User Defined Codes - Item Category Code 004
1801.00 C*
1802.00 CSR      RAX004  IFBQ *BLANK
1803.00 CSR      CLEAR10005U
1804.00 CSR      MOVELRAX004      WURY
1805.00 CSR      MOVE RAX004      WURY
1806.00 CSR      MOVE QXX004      WURY
1807.00 CSR      CALL 'X0005'      01
1808.00 C*
1809.00 CSR      FARM          10005U
1810.00 CSR      IFBQ '1'
1811.00 CSR      MOVE '1'          SMK,09      5192
1812.00 CSR      SETON
1813.00 CSR      END
1814.00 C*
1815.00 C*      Scrub and edit - Item Category Code 005
1816.00 C*
1817.00 CSR      MOVELVXX005      QXX005
1818.00 C*
1819.00 C*      Set default value - Item Category Code 005
1820.00 C*
1821.00 CSR      QXX005  IFBQ *BLANK
1822.00 CSR      DXX005  IFBQ *BLANK
1823.00 CSR      MOVELDXX005      @40
1824.00 CSR      MOVES@40      QXX005
1825.00 CSR      @40,1  IFBQ ' '
1826.00 CSR      MOVE ' '          @40,1
1827.00 CSR      Z-ADD2      MM
1828.00 CSR      MM      DOWLE@40
1829.00 CSR      @40,MM  IFBQ
1830.00 CSR      MOVE ' '          @40,MM
1831.00 CSR      END
1832.00 CSR      ADD 1      MM
1833.00 CSR      END
1834.00 CSR      MOVES@40,2      QXX005
1835.00 CSR      END
1836.00 CSR      END
1837.00 C*
1838.00 C*      Edit allowed values - Item Category Code 005
1839.00 C*
1840.00 CSR      RAX005  IFBQ *BLANK
1841.00 CSR      AMX005  IFBQ *SE
1842.00 CSR      QXX005  ANDRQ*BLANK
1843.00 CSR      MOVE '1'          SMK,03      5293
1844.00 CSR      SETON
1845.00 CSR      ELAR
1846.00 CSR      MOVESRAX005      @40
1847.00 CSR      MOVE *RIVAL      @AV
1848.00 CSR      EDER C997
1849.00 C*
1850.00 C*      MOVE ' '          SERTST
1851.00 CSR      MOVE *BLANK      SWSKLO 10
1852.00 CSR      MOVELQXX005      SWSKLO
1853.00 CSR      IFBQ *RIVAL
1854.00 CSR      @AV,1  LONTP@AV      01
1855.00 CSR      *INCL  IFBQ '0'
1856.00 CSR      MOVE '1'          SERTST
1857.00 CSR      END
1858.00 CSR      SERTST  IFBQ '1'
1859.00 CSR      MOVE '1'          SMK,07      5292
1860.00 CSR      SETON
1861.00 CSR      END
1862.00 CSR      END
1863.00 CSR      END
1864.00 CSR      END

```

Figure 23–29 Maintenance Program without a Subfile (part 25)

```

1858.00 C*
1859.00 C* Edit upper and lower range - Item Category Code 003
1860.00 C*
1861.00 CGR LEX005 IFNR *BLANK
1862.00 CGR MOVE '1' SERTST
1863.00 CGR QXX005 IFNR LEX005
1864.00 CGR QXX005 ANDLSTX005
1865.00 CGR MOVE ' ' SERTST
1866.00 CGR END
1867.00 CGR SERTST IFNR '1'
1868.00 CGR MOVE '1' QMX,87
1869.00 CGR GETON 3293
1870.00 CGR END
1871.00 CGR END
1872.00 C*
1873.00 C* Edit from User Defined Codes - Item Category Code 003
1874.00 C*
1875.00 CGR RAX005 IFNR *BLANK
1876.00 CGR CLCAN10005U
1877.00 CGR MOVELRAX005 WURY
1878.00 CGR MOVE RAX005 WURT
1879.00 CGR MOVE QXX005 WURY
1880.00 CGR CALL 'X0005' 91
1881.00 C*
1882.00 CGR RANM 10005U
1883.00 CGR #WERR IFNR '1'
1884.00 CGR MOVE '1' QMX,89
1885.00 CGR GETON 3293
1886.00 CGR END
1887.00 CGR END
1888.00 C*-----
1889.00 CGR END005 ENDGR
1890.00 C*-----
1891.00 C*
1892.00 C* Copy Common Subroutine - Currency - Translate Video Fields to Data Base
1893.00 C*
1894.00 C/COPY JDCOPY,C06131
1895.00 C*-----
1896.00 C*
1897.00 C* Copy Common Subroutine - Build Allowed Values Work Array
1898.00 C*-----
1899.00 C/COPY JDCOPY,C997
1900.00 C*-----
1901.00 C*
1902.00 C* SUBROUTINE S010 - Update Data Base
1903.00 C*-----
1904.00 C*
1905.00 C* Processing: 1. Update data base file based upon valid
1906.00 C* action codes.
1907.00 C*
1908.00 CGR S010 BEGIN
1909.00 C* ----
1910.00 C*
1911.00 C* If add action, add record. Indicator value for action code is
1912.00 C* assigned in copy module C0001.
1913.00 CGR *IN21 IFNR '1'
1914.00 CGR WRITE92001 99
1915.00 CGR END
1916.00 C*
1917.00 C* If change action, update record.
1918.00 C*
1919.00 CGR *IN22 IFNR '1'
1920.00 CGR UPDATE92001 99
1921.00 CGR END
1922.00 C*
1923.00 C* If delete action, delete record.
1924.00 C*
1925.00 CGR *IN23 IFNR '1'
1926.00 CGR DELETE92001 99
1927.00 CGR END
1928.00 C*

```

Figure 23-30 Maintenance Program without a Subfile (part 26)

1929.00	C*	Clear data field for next transaction				Forces clear of everything before processing next record.
1930.00	C*					Simulates user pressing the Clear Screen function key.
1931.00	CSR	MOVE #PCLR	SSAID			
1932.00	CSR	SSER SSU1				
1933.00	C*	END-010	ENDGR			
1934.00	C*					
1935.00	C*					
1936.00	C*					
1937.00	C*	SUBROUTINE 9999 - Load Dictionary parameters.				Retrieves all of the Data Dictionary editing parameters for necessary data items used in the program and moves the information into constant fields
1938.00	C*					
1940.00	CSR	9999	SSGRN			
1941.00	C*					
1942.00	C*					
1943.00	C*	Dictionary parameters for - Cost Center				
1944.00	C*					
1945.00	C*					
1946.00	CSR	MOVE 'BLANK	PRDTAT			
1947.00	CSR	MOVE 'XCC'	PRDTAT			
1948.00	CSR	CALL 'X99900'		91		Data Dictionary file server
1949.00	C*					
1950.00	CSR	PRM	PRM	199000		
1951.00	CSR	IFREQ '0'				
1952.00	CSR	MOVE PRDTAT	TXNCC	1		
1953.00	CSR	MOVE PRCC	TXNCC	1		
1954.00	CSR	MOVE PRDTAG	TXNCC	50		
1955.00	CSR	MOVE PRDTAD	TXNCC	20		
1956.00	CSR	MOVE PRCDRC	TXNCC	1		
1957.00	CSR	MOVE PRCC	TXNCC	4		
1958.00	CSR	MOVE PRAT	TXNCC	2		
1959.00	CSR	MOVE PRVAL	TXNCC	40		
1960.00	CSR	MOVE PRVAL	TXNCC	40		
1961.00	CSR	MOVE PRVAL	TXNCC	40		
1962.00	CSR	MOVE PRVAL	TXNCC	40		
1963.00	CSR	MOVE PRVAL	TXNCC	40		
1964.00	CSR	MOVE PRVAL	TXNCC	40		
1965.00	CSR	MOVE PRVAL	TXNCC	40		
1966.00	CSR	MOVE PRVAL	TXNCC	40		
1967.00	CSR	MOVE PRVAL	TXNCC	40		
1968.00	CSR	MOVE PRVAL	TXNCC	40		
1969.00	CSR	MOVE PRVAL	TXNCC	40		
1970.00	CSR	MOVE PRVAL	TXNCC	40		
1971.00	CSR	MOVE PRVAL	TXNCC	40		
1972.00	CSR	MOVE PRVAL	TXNCC	40		
1973.00	CSR	MOVE PRVAL	TXNCC	40		
1974.00	C*					
1975.00	C*	Dictionary parameters for - Description				
1976.00	C*					
1977.00	CSR	MOVE 'BLANK	PRDTAT			
1978.00	CSR	MOVE 'XCC'	PRDTAT			
1979.00	CSR	CALL 'X99900'		91		
1980.00	C*					
1981.00	CSR	PRM	PRM	199000		
1982.00	CSR	IFREQ '0'				
1983.00	CSR	MOVE PRDTAT	TXNCC	1		
1984.00	CSR	MOVE PRCC	TXNCC	1		
1985.00	CSR	MOVE PRDTAG	TXNCC	50		
1986.00	CSR	MOVE PRDTAD	TXNCC	20		
1987.00	CSR	MOVE PRCDRC	TXNCC	1		
1988.00	CSR	MOVE PRCC	TXNCC	4		
1989.00	CSR	MOVE PRAT	TXNCC	2		
1990.00	CSR	MOVE PRVAL	TXNCC	40		
1991.00	CSR	MOVE PRVAL	TXNCC	40		
1992.00	CSR	MOVE PRVAL	TXNCC	40		
1993.00	CSR	MOVE PRVAL	TXNCC	40		
1994.00	CSR	MOVE PRVAL	TXNCC	40		
1995.00	CSR	MOVE PRVAL	TXNCC	40		
1996.00	CSR	MOVE PRVAL	TXNCC	40		
1997.00	CSR	MOVE PRVAL	TXNCC	40		
1998.00	CSR	MOVE PRVAL	TXNCC	40		
1999.00	CSR	MOVE PRVAL	TXNCC	40		
2000.00	CSR	MOVE PRVAL	TXNCC	40		
2001.00	CSR	MOVE PRVAL	TXNCC	40		
2002.00	CSR	MOVE PRVAL	TXNCC	40		
2003.00	CSR	MOVE PRVAL	TXNCC	40		
2004.00	C*					
2005.00	C*					

Figure 23-31 Maintenance Program without a Subfile (part 27)

2006.00	C*	Dictionary parameters for - Date Last Ship			
2007.00	C*				
2008.00	CSN	MOVE 'BLANK'	PROTAT		
2009.00	CSN	MOVE 'XDT'	PROTAT		
2010.00	CSN	CALL 'X99002'			91
2011.00	C*	-----			
2012.00	CSN	FORM	199002		
2013.00	CSN	IFREQ '0'			
2015.00	CSN	MOVE PROTAT	TENDT	1	
2016.00	CSN	MOVE PRRC	RENDT	1	
2017.00	CSN	MOVE PRDTAG	GENDT	50	
2018.00	CSN	MOVE PRDTAD	GENDT	20	
2019.00	CSN	MOVE PRCDRC	PRGNT	1	
2020.00	CSN	MOVE PRST	RENDT	4	
2021.00	CSN	MOVE PRST	RENDT	2	
2022.00	CSN	MOVE PRVAL	GENDT	40	
2023.00	CSN	MOVE PRVAL	RENDT	40	
2024.00	CSN	MOVE PRVAL	LENDT	40	
2025.00	CSN	MOVE PRVAL	UNENDT	40	
2026.00	CSN	MOVE PRDWR	WENDT	20	
2027.00	CSN	MOVE PRLA	JENDT	1	
2029.00	CSN	MOVE PRNIX	RENDT	20	
2029.00	CSN	Z-ADD1	RENDT	110	
2030.00	CSN	MOVE PRXDT	RA		
2031.00	CSN	DO RA			
2032.00	CSN	MULT 10	RENDT		
2033.00	CSN	END			
2034.00	CSN	END			
2035.00	C*	-----			
2036.00	C*				
2037.00	C*	Dictionary parameters for - Item ID			
2038.00	C*				
2039.00	CSN	MOVE 'BLANK'	PROTAT		
2040.00	CSN	MOVE 'XIT'	PROTAT		
2041.00	CSN	CALL 'X99002'			91
2042.00	C*	-----			
2043.00	CSN	FORM	199002		
2044.00	CSN	IFREQ '0'			
2046.00	CSN	MOVE PROTAT	TEKIT	1	
2047.00	CSN	MOVE PRRC	REKIT	1	
2048.00	CSN	MOVE PRDTAG	GENKIT	50	
2049.00	CSN	MOVE PRDTAD	GENKIT	20	
2050.00	CSN	MOVE PRCDRC	PRKIT	1	
2051.00	CSN	MOVE PRST	REKIT	4	
2052.00	CSN	MOVE PRST	REKIT	2	
2053.00	CSN	MOVE PRVAL	GENKIT	40	
2054.00	CSN	MOVE PRVAL	REKIT	40	
2055.00	CSN	MOVE PRVAL	LEKIT	40	
2056.00	CSN	MOVE PRVAL	UNKIT	40	
2057.00	CSN	MOVE PRDWR	WENKIT	20	
2058.00	CSN	MOVE PRLA	JENKIT	1	
2059.00	CSN	MOVE PRNIX	REKIT	20	
2060.00	CSN	Z-ADD1	REKIT	110	
2061.00	CSN	MOVE PRKIT	RA		
2062.00	CSN	DO RA			
2063.00	CSN	MULT 10	REKIT		
2064.00	CSN	END			
2065.00	CSN	END			
2066.00	C*	-----			
2067.00	C*				
2068.00	C*	Dictionary parameters for - Quantity - On Hand			
2069.00	C*				
2070.00	CSN	MOVE 'BLANK'	PROTAT		
2071.00	CSN	MOVE 'XGT'	PROTAT		
2072.00	CSN	CALL 'X99002'			91
2073.00	C*	-----			
2074.00	CSN	FORM	199002		
2075.00	CSN	IFREQ '0'			
2077.00	CSN	MOVE PROTAT	TENDT	1	
2078.00	CSN	MOVE PRRC	RENDT	1	
2079.00	CSN	MOVE PRDTAG	GENDT	50	
2080.00	CSN	MOVE PRDTAD	GENDT	20	
2081.00	CSN	MOVE PRCDRC	PRGNT	1	
2082.00	CSN	MOVE PRST	RENDT	4	

Figure 23-32 Maintenance Program without a Subfile (part 28)

```

2082.00 CSE      MOVE PRST      RANQT      2
2084.00 CSE      MOVE PRVAL     RANQT      40
2085.00 CSE      MOVE PRVAL     RANQT      40
2086.00 CSE      MOVE PRVAL     LANQT      40
2087.00 CSE      MOVE PRVAL     UNANQT     40
2088.00 CSE      MOVE PRDUMR     HANQT      20
2089.00 CSE      MOVE PRLE      JANQT      1
2090.00 CSE      MOVE PRNNIX     HANQT      20
2091.00 CSE      Z-ADOL          HANQT      110
2092.00 CSE      MOVE PRANQT     NA
2093.00 CSE      DO NA
2094.00 CSE      MOLT 10      HANQT
2095.00 CSE      END
2096.00 CSE
2097.00 C*
2098.00 C* -----
2099.00 C* Dictionary parameters for - Item Type
2100.00 C*
2101.00 CSE      MOVE 'BLANK'     PRDTAI
2102.00 CSE      MOVE 'XTY'      PRDTAI
2103.00 CSE      CALL 'X99-00E'
2104.00 C*
2105.00 CSE      PRNR      IFDQ '0'      19900E
2106.00 CSE
2107.00 CSE      MOVE PRDTAT     TANTY      1
2108.00 CSE      MOVE PRPC      RANTY      1
2109.00 CSE      MOVE PRDTAG     CANTY      50
2110.00 CSE      MOVE PRDTAD     CANTY      20
2111.00 CSE      MOVE PRCDRC     FANTY      1
2112.00 CSE      MOVE PRFAGY     RANTY      4
2113.00 CSE      MOVE PRST      RANTY      2
2114.00 CSE      MOVE PRVAL     CANTY      40
2115.00 CSE      MOVE PRVAL     RANTY      40
2116.00 CSE      MOVE PRVAL     LANTY      40
2117.00 CSE      MOVE PRVAL     UNANTY     40
2118.00 CSE      MOVE PRDUMR     HANTY      20
2119.00 CSE      MOVE PRLE      JANTY      1
2120.00 CSE      MOVE PRNNIX     HANTY      20
2121.00 CSE      Z-ADOL          HANTY      110
2122.00 CSE      MOVE PRNTY     NA
2123.00 CSE      DO NA
2124.00 CSE      MOLT 10      HANTY
2125.00 CSE      END
2126.00 CSE
2127.00 C*
2128.00 C* -----
2129.00 C* Dictionary parameters for - Item Unit of Measure
2130.00 C*
2131.00 CSE      MOVE 'BLANK'     PRDTAI
2132.00 CSE      MOVE 'XUM'      PRDTAI
2133.00 CSE      CALL 'X99-00E'
2134.00 C*
2135.00 CSE      PRNR      IFDQ '0'      19900E
2136.00 CSE
2137.00 CSE      MOVE PRDTAT     TANNUM      1
2138.00 CSE      MOVE PRPC      RANNUM      1
2139.00 CSE      MOVE PRDTAG     CANNUM      50
2140.00 CSE      MOVE PRDTAD     CANNUM      20
2141.00 CSE      MOVE PRCDRC     FANNUM      1
2142.00 CSE      MOVE PRFAGY     RANNUM      4
2143.00 CSE      MOVE PRST      RANNUM      2
2144.00 CSE      MOVE PRVAL     CANNUM      40
2145.00 CSE      MOVE PRVAL     RANNUM      40
2146.00 CSE      MOVE PRVAL     LANNUM      40
2147.00 CSE      MOVE PRVAL     UNANNUM     40
2148.00 CSE      MOVE PRDUMR     HANNUM      20
2149.00 CSE      MOVE PRLE      JANNUM      1
2150.00 CSE      MOVE PRNNIX     HANNUM      20
2151.00 CSE      Z-ADOL          HANNUM      110
2152.00 CSE      MOVE PRNUM     NA
2153.00 CSE      DO NA
2154.00 CSE      MOLT 10      HANNUM
2155.00 CSE      END
2156.00 CSE
2157.00 C*
2158.00 C*
2159.00 C*

```

Figure 23-33 Maintenance Program without a Subfile (part 29)

2166.00	C*				
2167.00	C*				
2168.00	C*	Dictionary parameters for - Item Category Code 001			
2169.00	C*				
2170.00	OSR	MOVE *BLANK	PRDTAT		
2171.00	OSR	MOVE *X001	PRDTAT		
2172.00	OSR	CALL 'X99002'		91	
2173.00	C*	-----			
2174.00	OSR	PARM		199002	
2175.00	OSR	IFRQ '0'			
2176.00	OSR	MOVE PRDTAT	TEN001	1	
2177.00	OSR	MOVE PRDC	SENO01	1	
2178.00	OSR	MOVE PRDTAG	CEMO01	50	
2179.00	OSR	MOVE PRDTAD	CEMO01	20	
2180.00	OSR	MOVE PRDCRC	FSNO01	1	
2181.00	OSR	MOVE PRST	SENO01	4	
2182.00	OSR	MOVE PRST	SENO01	2	
2183.00	OSR	MOVE PRVAL	CEMO01	40	
2184.00	OSR	MOVE PRVAL	ASNO01	40	
2185.00	OSR	MOVE PRVAL	LENO01	40	
2186.00	OSR	MOVE PRVAL	UNNO01	40	
2187.00	OSR	MOVE PRDWR	WENO01	20	
2188.00	OSR	MOVE PRLE	SENO01	1	
2189.00	OSR	MOVE PRNNIX	SENO01	20	
2190.00	OSR	Z-ADD1	WENO01	110	
2191.00	OSR	MOVE PRX001	NA		
2192.00	OSR	DO NA			
2193.00	OSR	MULT 10	WENO01		
2194.00	OSR	END			
2195.00	OSR	END			
2196.00	C*				
2197.00	C*				
2198.00	C*	Dictionary parameters for - Item Category Code 002			
2199.00	C*				
2200.00	OSR	MOVE *BLANK	PRDTAT		
2201.00	OSR	MOVE *X002	PRDTAT		
2202.00	OSR	CALL 'X99002'		91	
2203.00	C*	-----			
2204.00	OSR	PARM		199002	
2205.00	OSR	IFRQ '0'			
2206.00	OSR	MOVE PRDTAT	TEN002	1	
2207.00	OSR	MOVE PRDC	SENO02	1	
2208.00	OSR	MOVE PRDTAG	CEMO02	50	
2209.00	OSR	MOVE PRDTAD	CEMO02	20	
2210.00	OSR	MOVE PRDCRC	FSNO02	1	
2211.00	OSR	MOVE PRST	SENO02	4	
2212.00	OSR	MOVE PRST	SENO02	2	
2213.00	OSR	MOVE PRVAL	CEMO02	40	
2214.00	OSR	MOVE PRVAL	ASNO02	40	
2215.00	OSR	MOVE PRVAL	LENO02	40	
2216.00	OSR	MOVE PRVAL	UNNO02	40	
2217.00	OSR	MOVE PRDWR	WENO02	20	
2218.00	OSR	MOVE PRLE	SENO02	1	
2219.00	OSR	MOVE PRNNIX	SENO02	20	
2220.00	OSR	Z-ADD1	WENO02	110	
2221.00	OSR	MOVE PRX002	NA		
2222.00	OSR	DO NA			
2223.00	OSR	MULT 10	WENO02		
2224.00	OSR	END			
2225.00	OSR	END			
2226.00	C*				
2227.00	C*				
2228.00	C*	Dictionary parameters for - Item Category Code 003			
2229.00	C*				
2230.00	OSR	MOVE *BLANK	PRDTAT		
2231.00	OSR	MOVE *X003	PRDTAT		
2232.00	OSR	CALL 'X99002'		91	
2233.00	C*	-----			
2234.00	OSR	PARM		199002	
2235.00	OSR	IFRQ '0'			
2236.00	OSR	MOVE PRDTAT	TEN003	1	
2237.00	OSR	MOVE PRDC	SENO03	1	
2238.00	OSR	MOVE PRDTAG	CEMO03	50	
2239.00	OSR	MOVE PRDTAD	CEMO03	20	
2240.00	OSR	MOVE PRDCRC	FSNO03	1	

Figure 23-34 Maintenance Program without a Subfile (part 30)

```

2237.00 CBR          MOVE PRST          84X002  4
2238.00 CBR          MOVE PRVAL          84X002  2
2239.00 CBR          MOVE PRVAL          14X002  40
2240.00 CBR          MOVE PRVAL          A4X002  40
2241.00 CBR          MOVE PRVAL          L4X002  40
2242.00 CBR          MOVE PRVAL          U4X002  40
2243.00 CBR          MOVE PRDWR          W4X002  20
2244.00 CBR          MOVE PRFL          J4X002  1
2245.00 CBR          MOVE PRFNIX          16X002  20
2246.00 CBR          I-ADD1          84X002  110
2247.00 CBR          MOVE PRX002          NA
2248.00 CBR          DO          NA
2249.00 CBR          NULT 10          84X002
2250.00 CBR          END
2251.00 CBR          END
2252.00 C*-----
2253.00 C*
2254.00 C* Dictionary parameters for - Item Category Code 004
2255.00 C*
2256.00 CBR          MOVE *BLANK          PRDTA1
2257.00 CBR          MOVE 'X004'          PRDTA1
2258.00 CBR          CALL 'XPS00E'
2259.00 C*
2260.00 CBR          PRM          PRM          19600E
2261.00 CBR          PRM          PRM          19600E
2262.00 CBR          PRM          PRM          19600E
2263.00 CBR          PRM          PRM          19600E
2264.00 CBR          PRM          PRM          19600E
2265.00 CBR          PRM          PRM          19600E
2266.00 CBR          PRM          PRM          19600E
2267.00 CBR          PRM          PRM          19600E
2268.00 CBR          PRM          PRM          19600E
2269.00 CBR          PRM          PRM          19600E
2270.00 CBR          PRM          PRM          19600E
2271.00 CBR          PRM          PRM          19600E
2272.00 CBR          PRM          PRM          19600E
2273.00 CBR          PRM          PRM          19600E
2274.00 CBR          PRM          PRM          19600E
2275.00 CBR          PRM          PRM          19600E
2276.00 CBR          PRM          PRM          19600E
2277.00 CBR          PRM          PRM          19600E
2278.00 CBR          PRM          PRM          19600E
2279.00 CBR          PRM          PRM          19600E
2280.00 CBR          PRM          PRM          19600E
2281.00 CBR          PRM          PRM          19600E
2282.00 CBR          PRM          PRM          19600E
2283.00 C*-----
2284.00 C*
2285.00 C* Dictionary parameters for - Item Category Code 005
2286.00 C*
2287.00 CBR          MOVE *BLANK          PRDTA1
2288.00 CBR          MOVE 'X005'          PRDTA1
2289.00 CBR          CALL 'XPS00E'
2290.00 C*
2291.00 CBR          PRM          PRM          19600E
2292.00 CBR          PRM          PRM          19600E
2293.00 CBR          PRM          PRM          19600E
2294.00 CBR          PRM          PRM          19600E
2295.00 CBR          PRM          PRM          19600E
2296.00 CBR          PRM          PRM          19600E
2297.00 CBR          PRM          PRM          19600E
2298.00 CBR          PRM          PRM          19600E
2299.00 CBR          PRM          PRM          19600E
2300.00 CBR          PRM          PRM          19600E
2301.00 CBR          PRM          PRM          19600E
2302.00 CBR          PRM          PRM          19600E
2303.00 CBR          PRM          PRM          19600E
2304.00 CBR          PRM          PRM          19600E
2305.00 CBR          PRM          PRM          19600E
2306.00 CBR          PRM          PRM          19600E
2307.00 CBR          PRM          PRM          19600E
2308.00 CBR          PRM          PRM          19600E
2309.00 CBR          PRM          PRM          19600E
2310.00 CBR          PRM          PRM          19600E
2311.00 CBR          PRM          PRM          19600E
2312.00 CBR          PRM          PRM          19600E
2313.00 CBR          PRM          PRM          19600E

```

Figure 23-35 Maintenance Program without a Subfile (part 31)

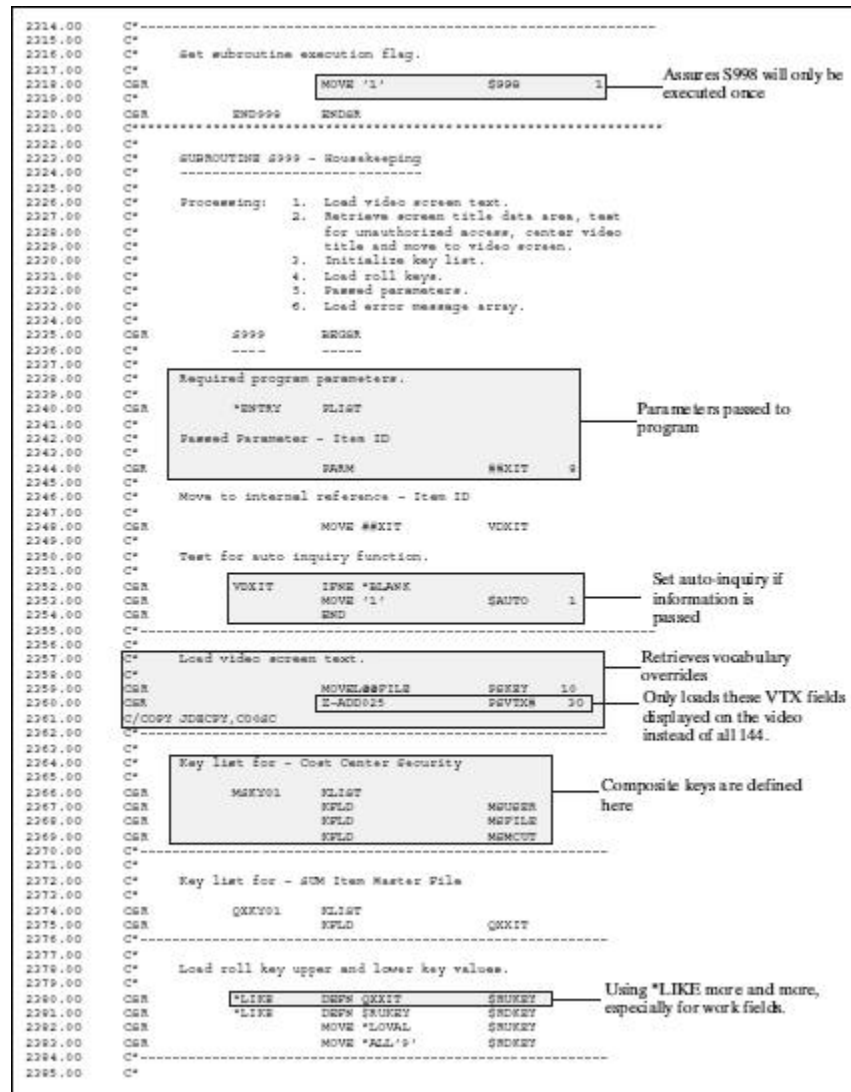


Figure 23-36 Maintenance Program without a Subfile (part 32)

```

2386.00 C*      Load error messages array.
2387.00 C*
2388.00 CGM      MOVE '0001'      EME_01      Inv Action      Error message
2389.00 CGM      MOVE '0002'      EME_02      Inv Eay        numbers from
2390.00 CGM      MOVE '0003'      EME_03      Inv blanks     Data Dictionary
2391.00 CGM      MOVE '0004'      EME_04      Inv Date
2392.00 CGM      MOVE '0005'      EME_05      Inv Next Nbr
2393.00 CGM      MOVE '0007'      EME_06      In Use
2394.00 CGM      MOVE '0025'      EME_07      Inv Values
2395.00 CGM      MOVE '0026'      EME_08      Inv MCU
2396.00 CGM      MOVE '0027'      EME_09      Inv Desc Tbl
2397.00 CGM      MOVE '0052'      EME_10
2398.00 C*-----
2399.00 C*
2400.00 C*      Load invalid action code array.      Lockout action code function used
2401.00 C*      MOVEA' '      @BAC      with the Program Generator
2402.00 CGM
2403.00 C*-----
2404.00 C*
2405.00 C*      Load system date.      Use the TIME
2406.00 C*      TIME      @SWH12 120      feature to allow for
2407.00 CGM      MOVE @SWH12  SSST  60      all date formats
2408.00 CGM      MOVE SSST      @SDAT  6
2409.00 CGM      MOVE 'X'@EVAL      @PFMT  7
2410.00 CGM      MOVE 'X'@EVAL      @PFMT  7
2411.00 CGM      MOVE 'X'@EVAL      @SDAT  9
2412.00 CGM      MOVE 'X'@EVAL      @TFMT  7
2413.00 CGM      MOVE 'X'@EVAL      @SDP  7
2414.00 CGM      MOVE 'X'@EVAL      @SDTST 1
2415.00 CGM      CALL 'X0026'
2416.00 C*-----
2417.00 CGM      FARM      @SDAT
2418.00 CGM      FARM      @SDAT
2419.00 CGM      FARM      @PFMT
2420.00 CGM      FARM      @TFMT
2421.00 CGM      FARM      @SDP
2422.00 CGM      FARM      @SDTST
2423.00 CGM      MOVE @SDAT      @SDPMT 60
2424.00 C*-----
2425.00 CGM      END999      ENDSR
2426.00 C*-----
2427.00 C*-----
2428.00 C*-----
2429.00 CGM      @P2801  E      UNLOCK      Method of releasing
                                         master file record locks

```

This chapter contains these topics:

- [Section 24.1, "About User Spaces"](#)
- [Section 24.2, "What Is a User Space?"](#)
- [Section 24.3, "What Are the Advantages of Using a User Space?"](#)
- [Section 24.4, "How Does a User Space Function?"](#)
- [Section 24.5, "Creating a User Space"](#)
- [Section 24.6, "Writing to a User Space"](#)
- [Section 24.7, "Reading from a User Space"](#)

24.1 About User Spaces

User spaces are IBM Operating System objects managed by Application Program Interfaces (APIs) to store data. User Object APIs create, manipulate, and delete user spaces and indexes. An API provides you with:

- A faster method of retrieving information
- A means of dynamically modifying sizes
- A means of manipulating user objects

You should place your user spaces in library QTEMP so that it is deleted automatically when the user signs off.

24.2 What Is a User Space?

A user space is an object made up of a collection of bytes that are used for storing any user defined information.

When you use a user space, there is no key to retrieve the information placed in the space. Therefore, the information in the user space is in the order that it was entered. A user space can store up to 16 megabytes of information.

Note: To see the contents of a user space, enter the command DMPOBJ (Dump Object) from any command line after the space has been loaded.

24.3 What Are the Advantages of Using a User Space?

The main advantage of using a user space is its speed. Because a user space consists of a string of bytes instead of elements like an array, you can write and retrieve records faster using a user space than an array.

In addition to speed, a user space provides you with more flexibility. A user space does not have a fixed record length. When you write a record to a user space, you define the length of that record. Therefore, each record you write to your user space can be a different size. In addition, it is possible to dynamically increase the size of your user space by calling the Enter User Space program (X00SPC) after creating the user space.

For example: @EX 999 30

The array @EX has a fixed record length of 30, therefore no record smaller or larger than 30 bytes can be written to this array.

User spaces are also used when communicating between two programs. The space can carry information loaded in one program to another program for retrieval.

For example: Program A creates the user space and loads information into a user space. Then Program A calls Program B and passes the name of the user space to it. Program B can retrieve information from the user space that was loaded by Program A.

24.4 How Does a User Space Function?

Remember that a user space is nothing more than a collection of bytes used to store information.

You write information to a user space, as well as retrieve information from it. Since there is no key associated with a user space, the information contained in a user space is in a user-defined order. The order is based on program controlled offset and length values.

24.5 Creating a User Space

To create a User Space

1. Determine if a user space already exists by using the JD Edwards World program J98CKOBJ.

Figure 24–1 Program J98CKOBJ

```

For example:  CALL      'J98CKOBJ'      81
              -----
              PARM          PSOBJ
              PARM          PSLIB
              PARM          PSTYPE
              PARM          PSMID
              PARM          PSAUT
              PARM          PSERR

```

PARM (Length)	Description
PSOBJ (10)	The name of your user space.
PSLIB (10)	The name of the library in which you wish to check for the existence of the user space. Generally, this is *LIBL to check all of the libraries in the library list.
PSTYPE (8)	The type of object you are checking for. Generally, this is *USRSPC for a user space.
PSMID (10)	The member ID if you are checking for a database file. Generally, this is *NONE.
PSAUT (10)	The authority or authorization list to be checked for the user. Generally, this is *NONE.
PSERR (1)	The error parameter that will indicate an error while checking your object. Generally, this is initialized with *BLANK. 0 – No authority 1 – Not found 3 – No library 4 – Member not found 5 – No authority to library 6 – Cannot assign library

2. Do one of the following:

- If a user space does exist you should clear it and write your new information over the old.
- If the user space does not exist and no errors occurred, you can create your user space. To create a user space, use the QUSCRTUS (Create User Space) command.

Figure 24–2 Create User Space

```
For example:  CALL      'QUSCRTUS'      81
               ----      -
               PARM      #SPNAM
               PARM      #SPATT
               PARM      #SPSIZ
               PARM      #SPVAL
               PARM      #SPAUT
               PARM      #SPTXT
```

PARM (Length))	Description
#SPNAM (20)	The first 10 characters contain your user space name, and the second 10 characters contain the name of the library where your user space is located. Remember; place your user space in library QTEMP to automatically delete your space when you sign off.
#SPATT (10)	The extended attribute of your user space. You may use this field to classify your user space. For example, JD Edwards World uses this field to label all of the user spaces with JD Edwards World.
#SPSIZ (4 binary)	The initial size of your user space. Any value from 1 byte to 16 megabytes.
#SPVAL (1)	The initial value of all bytes in the user space. Generally, this is *BLANK.
#SPAUT (10)	The authority you give users to your user space. Generally, this is *ALL.
#SPTXT (50)	The text description of your user space.

To dynamically increase the size of your user space when maximum allocation is reached, call the Enlarge User Space program (X00SPC).

Figure 24–3 Enlarge User Space Program

```
For example:  CALL      'X00SPC'      81
               ----      -
               PARM      #XSPCN
               PARM      #XRQSZ
               PARM      #XERR
```

PARM (Length))	Description
#XSPCN (20)	The first 10 characters contain your user space name, and the second 10 characters contain the name of the library where your user space is located.
#XRQSZ (15,0)	The requested size to increase your space.
#XERR (1)	An error flag: 1 – Space not found 2 – Not authorized 3 – Error

24.6 Writing to a User Space

To write to a User Space

Use either the QUSCHGUS or the X98CHGUS (Change User Space) command.

Figure 24-4 Change User Space Command

```

For example:  CALL      'QUSCHGUS'      81
              ----      -
              PARM      #SPNAM
              PARM      #SPPOS
              PARM      #SPLGH
              PARM      #SPVAL
              PARM      #SPAUX

```

PARM (Length))	Description
#SPNAM (20)	The first 10 characters contain your user space name, and the second 10 characters contain the name of the library where your user space is located.
#SPPOS (4 binary)	The starting position in your user space where the information will begin. It must be the first byte and must have a value greater than 0.
#SPLGH (4 binary)	The length of the information that is being written to your user space. This field is user-defined, but it must be greater than 0.
#SPVAL (* user defined)	The actual information to be written to your user space. The field must be at least as long as the length parameter.
#SPAUX (1)	Used to force changes made to your user space to auxiliary storage, such as a disk. The valid values are: 0 – do not force changes 1 – write changes 2 – write changes immediately

Note: The X98CHGUS program, JD Edwards World's version of the IBM command QUSCHGUS, will perform a transfer control to QUSCHGUS.

24.6.1 Tracking Information if Writing Variable Length Records

Method 1

During the process of writing information to your user space, you should keep track of a pointer. This will ensure that you will not overwrite information or retrieve incorrect information.

One way to keep track of the pointer is to initialize it to 1. After you write information to your user space, add the length of the information to your pointer. The pointer is now set at the next starting point and ready for you to enter new information.

If the information you are writing to your user space contains various lengths, you should maintain the length of each piece of information in save fields. You can use the save fields when you wish to retrieve the information from your user space.

Figure 24–5 Keeping Track of a Pointer

Initialize pointer to 1		Add 30 bytes to pointer and to save field		Add 41 bytes to pointer and to another save field	
B	A- 30 bytes -"	B	"	B	A- 41 bytes -

Method 2

You can also reserve the first 2 or 3 bytes of every record for the size of that record. Then you would only have to load that part of the record with its length. When you read the record from the user space, the first 2 or 3 bytes will tell you how long the record is.

24.7 Reading from a User Space

Once you have loaded information into your user space, you are ready to retrieve it. Do not forget that your pointer must be set to the proper starting position to ensure the correct information is retrieved.

To read from a User Space

Use the QUSRTVUS (Retrieve User Space) command.

Figure 24–6 Retrieve User Space Command

```
For example:  CALL      'QUSRTVUS'      81
               ----      -
               PARM      #SPNAM
               PARM      #SPPOS
               PARM      #SPLGH
               PARM      #SPREC
```

PARM (Length))	Description
#SPNAM (20)	The first 10 characters contain your user space name, and the second 10 characters contain the name of the library where your user space is located.
#SPPOS (4 binary)	The starting position in your user space where the information will begin. It must be the first byte and must have a value greater than 0.
#SPLGH (4 binary)	The length of the information that is being retrieved to your user space. This field is user-defined, it must not be larger than the variable that will receive the information, and it must be greater than 0.
#SPREC (* user defined)	The variable that will receive the information from your user space.

This chapter contains these topics:

- [Section 25.1, "About User Indices"](#)
- [Section 25.2, "What Are the Advantages of Using a User Index?"](#)
- [Section 25.3, "How Does a User Index Function?"](#)
- [Section 25.4, "Creating a User Index"](#)
- [Section 25.5, "Writing to a User Index"](#)
- [Section 25.6, "Appearance of Records"](#)
- [Section 25.7, "Retrieving Data from a User Index"](#)

25.1 About User Indices

A user index is an object that will:

- Store data
- Allow search functions
- Automatically sort data based on its value

When you use a user index you must have a key to retrieve the information placed in the index. The key must be unique and you can only retrieve data using the key in ascending or descending order.

When you enter data into a user index, it is placed in order according to its key value.

A user index can store up to 4 gigabytes of information. Each key and record within a user index can be 1 to 999 bytes long.

Note: To see the contents of a user index, enter the command DMPOBJ (Dump Object) from any command line after the index has been loaded. You should place your user indices in library QTEMP so that it will be deleted automatically when you sign off.

To work with user indices, perform the following tasks:

- Create a User Index
- Write to a User Index
- Retrieve from a User Index

25.2 What Are the Advantages of Using a User Index?

When you load data into your user index, it is automatically sorted for you. Based on your key for the index, the information is arranged according to its value. This will help streamline table searches, cross referencing, and the ordering of data.

The size flexibility of a user index is much better than an array because arrays have a fixed size. A user index is only as big as the information it contains at one time. User indices expand as you add data to them.

For example: @EX 999 30

The array @EX has a fixed size of approximately 3 kilobytes. Each record must be 30 bytes long and up to 999 records can be loaded. If you have 300 records loaded into @EX, you will waste approximately 2 kilobytes. On the other hand, if you have 1500 records to load, the program will error when record number 1000 is loaded. A user index would be able to accommodate both situations.

- A user index is able to retrieve records faster than an array.
- Although a user index may expand to hold more records, it will not contract when records are removed. If you load 100 records into a user index and then remove 50 of them, the user index will remain at the 100 record level size.

You may retrieve data from a user index in ascending order or descending order. When data is loaded into a user index, it is loaded in ascending order. This does not restrict you to retrieving it in this order.

25.3 How Does a User Index Function?

A user index stores data and allows you to retrieve it by a key, which must be unique. The data it stores is made up of a data structure that consists of several fields that you wish to store. A user index is capable of expanding when you add data to it.

JD Edwards World leaves the first byte in the user index blank for clearing purposes.

Figure 25–1 User Index Data Structure

A ----- Key ----- "			A ----- Data ----- "	

When using a user index you can create it, add data to it, remove data from it, and delete it.

User indices, like user spaces, should be created in your QTEMP library so you do not have to worry about deleting them.

25.4 Creating a User Index

To check for user index

Before you actually create a user index, check to see if one already exists using the JD Edwards World program J98CKOBJ.

Figure 25–2 J98CKOBJ Program

```
For example:  CALL      'J98CKOBJ'      81
              ----      -
              PARM      PSOBJ
              PARM      PSLIB
              PARM      PSTYPE
              PARM      PSMID
              PARM      PSAUT
              PARM      PSERR
```

PARM (Length)	Description
PSOBJ (10)	The name of your user index.
PSLIB (10)	The name of the library in which you wish to check for the existence of the user index. Generally, this is *LIBL to check all of the libraries in the library list.
PSTYPE (8)	The type of object you are checking for. Generally, this is *USRIDX for a user index.
PSMID (10)	The member if you are checking for a database file. Generally, this is *NONE.
PSAUT (10)	The authority or authorization list to be checked for the user. Generally, this is *NONE.

If a user index exists, clear it and write your new information over the old.

Figure 25–3 Clearing All Records with a Blank Key

```
For example:  CALL      'X00IDX'                81
              ----      -
              PARM                      #0XNAM
              PARM      'D'              #0XACT
              PARM      'EQ'            #0XRUL
              PARM      '1'              #0XKLN
              PARM      *BLANK          #0XKEY
              PARM                      #0XRLN
              PARM                      #0XREC
              PARM                      #0XSTA
```

Note: The above code deletes (clears) every record with a key of *Blank in position one.

If the user index did not exist, you can now create your user index.

To create a User Index

Use the QUSCRTUI (Create User Index) command.

Figure 25–4 QUSCRTUI Commmand

```
For example:  CALL      'QUSCRTUI'            81
              ----      -
              PARM                      #IDNAM
              PARM                      #IDATT
              PARM                      #IDENT
              PARM                      #IDLEN
              PARM                      #IDINS
              PARM                      #IDKEY
              PARM                      #IDUPD
              PARM                      #IDOPT
              PARM                      #IDAUT
              PARM                      #IDTXT
```

PARM (Length)	Description
#IDNAM (20)	The first 10 characters contain your user index name, and the second 10 characters contain the name of the library where your user index is located. Remember to place your user index in library QTEMP to automatically delete your index when you sign off.
#IDATT (10)	The extended attribute of your user index. You may use this field to classify your user index. For example, JD Edwards World uses this field to label all of the user indexes with JD Edwards World.
#IDENT (1)	Whether the records you are loading into your user index are Fixed-length (F) or Variable-length (V). Generally, this is set to 'F'.
#IDLEN (4 binary)	The length of the records to be entered into your user index. For fixed-length records valid values are 1 to 999. For variable-length records, enter 0 for a key length of 1 to 120, or 1 for a key length of 1 to 999.
#IDINS (1)	Whether you are loading your user index by a key or not. Generally, this is set to 1 to load your index by a key. A value of 0 means you are not loading your index by a key.
#IDKEY (4 binary)	The length of your key. The first byte in your record must be the beginning of your key. The values are 1 to 999 or 0 for no key.
#IDUPD (1)	Whether or not the data in your user index will be immediately updated. Each data change to your index is written to auxiliary storage. The values are 0 for no immediate update or 1 for immediate update. Generally, this is 0.
#IDOPT (1)	The type of access in which to optimize your index. The values are 0 to optimize for random references or 1 to optimize for sequential references. Generally, this is 1.
#SPAUT (10)	The authority you give users to your user index. Generally, this is *ALL.
#SPTXT (50)	The text description of your user index.

Note: You may want to define data structures containing some of the information required for the parameters to avoid having to enter values. The user index name, record length, key length, and user index text are good examples.

25.5 Writing to a User Index

To write to a User Index

JD Edwards World provides an external program called User Index Server (X00IDX) to manipulate data for user index entries.

Figure 25–5 User Index Server program

```

For example:  CALL      'X00IDX'      81
              ----      -
              PARM      #0XNAM
              PARM      #0XACT
              PARM      #0XRUL
              PARM      #0XKLN
              PARM      #0XKEY
              PARM      #0XRLN
              PARM      #0XREC
              PARM      #0XSTA

```

PARM (Length)	Description
#0XNAM (20)	The first 10 characters contain your user index name, and the second 10 characters contain the name of the library where your user index is located. Remember to place your user index in library QTEMP to automatically delete you index when you sign off.
#0XACT (1)	The action you want to perform on your user index. The valid values are: I – Inquire A – Add C – Change D – Delete
#0XRUL (2)	The rule used to search your user index depending on the action to be performed. The valid values are: EQ – Equal to GT – Greater than LT – Less than GE – Greater than or Equal to LE – Less than or Equal to
#0XKLN (3,0)	The length of your key. The first byte in your record must be the beginning of your key. The values are 1 to 999 or 0 for no key.
#0XKEY (120)	The fields that make up the key to your user index. *FIRST (first record) and *LAST (last record) are allowed.
#0XRLN (3,0)	The length of your record. The values are 1 to 999.
#0XREC (120)	The record you are entering or deleting from your user index. This parameter will also receive the record when you inquire on your user index.

PARM (Length)	Description
#0XSTA (1)	The error status of the manipulation. The possible values are: 0 – Record found 1 – Record not found, not authorized 8 – Rule invalid 9 – Error on action

25.6 Appearance of Records

The records added to your user index will appear in ascending order.

For example: You created a user index to keep track of your ice cream sales. Each record within your user index contains the total sales amount, item, item description, and cost center. The key for your user index consists of total sales amount and item (remember the key must be unique).

The following records are to be loaded into your user index:

Total	Sales Item	Description	Cost Center
\$ 500.00	CHO	Chocolate	Denver
\$ 250.00	STR	Strawberry	Denver
\$ 750.00	C&C	Cookies & Cream	Denver
\$1200.00	VAN	Vanilla	Denver
\$ 400.00	ROC	Rocky Road	Denver

Because the key to your user index is total sales amount and item, the records will be entered into your index in ascending order by total sales amount first, then item. So your user index will look like this:

Ice Cream Sales Index

Total	Sales Item	Description	Cost Center
\$ 250.00	STR	Strawberry	Denver
\$ 400.00	ROC	Rocky Road	Denver
\$ 500.00	CHO	Chocolate	Denver
\$ 750.00	C&C	Cookies & Cream	Denver
\$1200.00	VAN	Vanilla	Denver

25.7 Retrieving Data from a User Index

You can retrieve data in ascending or descending order.

To retrieve data in Ascending Order

1. Use the User Index Server (X00IDX).
2. Set the Action parm to inquire (I).
3. Set Rule to Equal to (EQ).

4. Set the Key to the first record (*FIRST).

Figure 25–6 User Index Server Set to Retrieve Data in Ascending Order

```
For example:  CALL      'X00IDX'
              -----
              PARM          #OXNAM 20
              PARM  'I'      #OXA CT 1
              PARM  'EQ'     #OXRUL 2
              PARM          #OXXKL N 30
              PARM  '*FIRST' #OXKEY120
              PARM          #OXRLN 30
              PARM          #OXREC120
              PARM          #OXSTA 1
```

5. To retrieve the next record, load the key with the current record's values and change your rule to "GT".

Figure 25–7 User Index Server Set to Retrieve the Next Record

```
For example:  CALL      'X00IDX'
              -----
              PARM          #OXNAM 20
              PARM  'I'      #OXA CT 1
              PARM  'GT'     #OXRUL 2
              PARM          #OXXKL N 30
              PARM          #OXKEY120
              PARM          #OXRLN 30
              PARM          #OXREC120
              PARM          #OXSTA 1
```

To retrieve data in descending order

1. Use the User Index Server (X00IDX).
2. Set the Action parm to inquire (I).
3. Set Rule to Equal to (EQ).
4. Set the Key to the first record (*LAST).

Figure 25–8 User Index Server Set to Retrieve Data in Descending Order

```

For example:  CALL      'X00IDX'
              -----
              PARM      #0XNAM 20
              PARM      'I'      #0XACT 1
              PARM      'GT'     #0XRUL 2
              PARM      #0XKLN 30
              PARM      #0XKEY120
              PARM      #0XRLN 30
              PARM      #0XREC120
              PARM      #0XSTA 1

```

5. To retrieve the next record, load the key with the current record's values and change your rule to "LT".

Figure 25–9 User Index Server Set to Retrieve the Next Record

```

For example:  CALL      'X00IDX'
              -----
              PARM      #0XNAM 20
              PARM      'I'      #0XACT 1
              PARM      'LT'     #0XRUL 2
              PARM      #0XKLN 30
              PARM      #0XKEY120
              PARM      #0XRLN 30
              PARM      #0XREC120
              PARM      #0XSTA 1

```

Figure 25-10 User Index Server report (part 1)

```

1.00  H/TITLE PINDEX - USER INDEX DEMONSTRATION
2.00  H*
3.00  H*
4.00  H*  copyright (c) 1993
5.00  H*  J. D. Edwards & company
6.00  H*  this unpublished material is proprietary to
7.00  H*  J. D. Edwards & company. All rights reserved.
8.00  H*  the methods and techniques described herein are
9.00  H*  considered trade secrets and/or confidential.
10.00 H*  reproduction or distribution, in whole or in part,
11.00 H*  is forbidden except by express written permission
12.00 H*  of J. D. Edwards & company.
13.00 H*
14.00 H*
15.00 H*
16.00 F*
17.00 F*  PROGRAM REVISION LOG
18.00 F*
19.00 F*
20.00 F*
21.00 F*
22.00 F*  Date      Programmer      Nature of Revision
23.00 F*  12/02/93  FRASINI          SAR # 289 (AS/400 A/G)
24.00 F*
25.00 F*
26.00 F*
27.00 F*  PINDEX CF E          WORKSTN  KINFGS  SRVFGS
28.00 F*                      II      HFILE  VINDEX
29.00 F*
30.00 F*
31.00 F*  copy member for composite common subroutine - c0001
32.00 F*
33.00 F*  E/COPY JDECFY,D0001
34.00 F*
35.00 E*
36.00 E*  PROGRAM TABLES AND ARRAYS
37.00 E*
38.00 E*
39.00 E*  ENK      64  4      ERROR MSG
40.00 E*  ENK      64  1      ERROR MSG
41.00 E*  ENK      64  4      ERROR MSG
42.00 E*  SDV      40  1      Dflt wrk
43.00 E*  SI#      99  1      save indicator
44.00 E*  SC      256 1      literal work
45.00 E*
46.00 E*
47.00 E*  copy composite member for common subroutine c0001
48.00 E*
49.00 E*  E/COPY JDECFY,D0001
50.00 E*
51.00 E*
52.00 E*  copy member for composite common subroutine c0012
53.00 E*
54.00 E*  E/COPY JDECFY,D0012
55.00 E*
56.00 E*
57.00 E*  copy member for composite common subroutine c0042
58.00 E*
59.00 E*  E/COPY JDECFY,D0042
60.00 E*
61.00 E*
62.00 E*  copy member for composite common subroutine c0097
63.00 E*
64.00 E*  E/COPY JDECFY,D0097
65.00 E*
66.00 I*
67.00 I*  PROGRAM INPUT SPECIFICATIONS AND DATA STRUCTURES
68.00 I*
69.00 I*
70.00 I*  data structure to load video screen text
71.00 I*
72.00 I*  IDSTXT  DS          248
73.00 I*          1 16 VTX001
74.00 I*          41 56 VTX002
75.00 I*          81 92 VTX003
76.00 I*          121 160 VTX004
77.00 I*          161 163 VTX005
78.00 I*          201 203 VTX006
79.00 I*
80.00 I*  I/COPY JDECFY,I00RSINK
81.00 I*  I/COPY JDECFY,I00RSSM
82.00 I*  I/COPY JDECFY,I00SPROG

```


Figure 25-11 User Index Server report (part 2)

83.00	I*								
84.00	I*								
85.00	I*	copy member for composite common subroutine - cooscc							
86.00	I*								
87.00	I/COPY JDBCPY, IOASC								
88.00	I*								
89.00	I*								
90.00	I*	data structures for user index.							
91.00	I*	=====							
92.00	I*								
93.00	I*	* entry record							
94.00	I*								
95.00	I	DSIDX1	DS						
96.00	I			1	1	\$IKEYL			Record format to
97.00	I			2	6	\$IKEY			be used with User
98.00	I			7	16	\$IKEY			Index defined as
99.00	I			19	48	\$IKEY1			a Data Structure
100.00	I			49	51	\$IKEY1			
101.00	I			52	54	\$IKEY2			
102.00	I*								
103.00	I*	* entry length, name/library, text							
104.00	I*								
105.00	I	DS							
106.00	I I	54		B	1	40\$IKEYL			Data Structure
107.00	I I	'PINDEX	QTEMP		5	24	\$IKEY		containing the
108.00	I I	'penetration index			25	44	\$IKEY		record length, User
109.00	I*								Index name, and
110.00	I*	* partial keys 1 & 2, full unique key KEYL.							User Index
111.00	I*								description text
112.00	I	DS							
113.00	I I	1		B	1	40\$IKEY1			
114.00	I I	6		B	5	80\$IKEY2			
115.00	I I	18		B	9	120\$IKEYL			
115.01	I*								
115.02	I*	data structure for file servers							Data structure defining three possible key
115.03	I*								lengths. \$IKEYL is the full key length. Refer to
115.04	I	DS0010	E DS0010						DSIDX1 to see which fields are key fields when
115.05	I*								\$IKEY1 (1 byte), \$IKEY2 (1-6 bytes), or
116.00	I/COPY JDBCPY, IOASC								\$\$IKEYL (1-18 bytes) are being used.
117.00	I/COPY JDBCPY, IOASC								
117.01	I/COPY JDBCPY, IOASC								
118.00	I*								
119.00	I*								
120.00	C*	=====							
121.00	C*	MAINLINE PROGRAM							
122.00	C*								
123.00	C*								
124.00	C*	process housekeeping.							
125.00	C*								
126.00	C	EXSR S999							
127.00	C*								
128.00	C*	if LR on, end program.							
129.00	C*								
130.00	C	*INLR CASEQ'1'				EOJ			
131.00	C*								
132.00	C*								
133.00	C*								
134.00	C*	if automatic inquiry set, process inquiry.							
135.00	C*								
136.00	C	\$AUTO CASEQ'1'				S003		24	
137.00	C*								
138.00	C	END							
139.00	C*								
140.00	C*	begin normal program processing.							
141.00	C*								
142.00	C*								
143.00	C	*INLR DOWEQ'0'							
144.00	C*								
145.00	C*	if subfile page display not set, set subfile page display.							
146.00	C	\$SPRNO IPHQ 0							
147.00	C	Z-ADD1				\$SPRNO			
148.00	C	END							
149.00	C*								
150.00	C*	if subfile page empty, don't display subfile page.							
151.00	C*								
152.00	C	IF		IFLE 0					
153.00	C			SETOF				38	
154.00	C	ELSE							
155.00	C	SETCH						38	
156.00	C	END							
157.00	C*								
158.00	C*	write video screen.							
159.00	C*								

Figure 25-12 User Index Server report (part 3)

```

160.00 C*
161.00 C WRITEVINDEX1
162.00 C WRITEVINDEX2
163.00 C MOVE '1' @WAID
164.00 C EXER S001
165.00 C*
166.00 C*
167.00 C* Load data field dictionary parameters (one cycle only).
168.00 C*
169.00 C S998 CASEQ' ' S998
170.00 C*
171.00 C END
172.00 C*
173.00 C* begin video screen read processing
174.00 C*
175.00 C SETOF 999301
176.00 C READ VINDEX 9998
177.00 C Z-ADD @FROM
178.00 C Z-ADD @RCOL
179.00 C*
180.00 C* if video read timed out, and program.
181.00 C*
182.00 C *IN99 CASEQ'1' END LR
183.00 C*
184.00 C @WAID CASEQ#FROM END LR
185.00 C*
186.00 C*
187.00 C* if valid function key pressed, process and return.
188.00 C*
189.00 C *IN15 IFEQ '1'
190.00 C EXER S008K
191.00 C*
192.00 C *INLR CASEQ'1' END
193.00 C*
194.00 C *IN15 CASEQ'1' END
195.00 C*
196.00 C END
197.00 C*
198.00 C* edit the action code.
199.00 C*
200.00 C EXER C0001
201.00 C*
202.00 C*
203.00 C* if end of job requested, and program.
204.00 C*
205.00 C @WAID CASEQ#FROM END
206.00 C*
207.00 C*
208.00 C* if clear screen requested, process and return.
209.00 C*
210.00 C @WAID IFEQ #FCLR
211.00 C EXER S001
212.00 C*
213.00 C GOTO END
214.00 C*
215.00 C END
216.00 C*
217.00 C* load subfile records.
218.00 C*
219.00 C EXER S003
220.00 C*
221.00 C* if add or change, validate all video input.
222.00 C*
223.00 C*
224.00 C*
225.00 C *IN93 CASEQ'0' S005
226.00 C*
227.00 C END
228.00 C*
229.00 C*
230.00 C* if no errors and not inquiry, update file.
231.00 C*
232.00 C *IN93 IFEQ '0'
233.00 C *IN24 CASEQ'0' S010
234.00 C*
235.00 C END
236.00 C*
237.00 C* return for next input.
238.00 C*
239.00 C END TAG
240.00 C*
241.00 C*
242.00 C* set correct message in line 24.

```

Figure 25-13 User Index Server report (part 4)

```

244.00
245.00 C NOVELSVL24E YDL24
246.00 C ELSE
247.00 C NOVELSVL24H YDL24
248.00 C END
249.00 C*
250.00 C* END
251.00 C
252.00 C EOT TAG
253.00 C*
254.00 C*
255.00 C* END MAINLINE PROGRAM
256.00 C*
257.00 C*****
258.00 C*
259.00 C* copy common subroutine - edit Action code
260.00 C*
261.00 C/COPY JDECPY,CO001
262.00 C*****
263.00 C*
264.00 C* SUBROUTINE S00EX - process function keys
265.00 C*
266.00 C*
267.00 C* PROCESSING: 1. process standard function keys.
268.00 C* 2. process special function key exits.
269.00 C*
270.00 C* S00EX BEGIN
271.00 C*
272.00 C*
273.00 C* retain current page of subfile.
274.00 C*
275.00 C E-ADDRESSCH #SPRD
276.00 C*
277.00 C* TOOEYA TAG
278.00 C*
279.00 C*
280.00 C* if EOT requested, exit subroutine.
281.00 C*
282.00 C* @@AID CARRQ#PNDJ ENDEXE LE
283.00 C*
284.00 C*
285.00 C* if display keys pressed, exit to help facility and return.
286.00 C*
287.00 C*
288.00 C* @@AID IFEQ #FKEYS
289.00 C* CALL 'P9601H' 98
290.00 C*
291.00 C* PARM
292.00 C* PARM IOGEC
293.00 C* PARM SEVFDG
294.00 C* PARM IOGCEK
295.00 C* @@AID CARRQ#FKEYS TOOEYA
296.00 C*
297.00 C* GOTO ENDEXE
298.00 C*
299.00 C* END
300.00 C*
301.00 C* if cursor sensitive help pressed, exit to cs help.
302.00 C*
303.00 C*
304.00 C* @@AID IFEQ #FCMTC
305.00 C* MOVER*IN
306.00 C* CALL 'X96CCF' **IN 98
307.00 C*
308.00 C* PARM
309.00 C* PARM IOGEC
310.00 C* PARM SEVFDG
311.00 C* PARM IOGCEK
312.00 C* PARM ' ' **CCFF 2
313.00 C* @@FLEN IFNE *BLANKS
314.00 C* ERGR GOOVL
315.00 C*
316.00 C* MOVER**IN *IN,1
317.00 C* END
318.00 C* NOVEL*BLANKS **DTAI
319.00 C* GOTO ENDEXE
320.00 C*
321.00 C* END
322.00 C*
323.00 C* if display errors pressed, exit to error messages.
324.00 C*
325.00 C*
326.00 C* @@AID IFEQ #FERRD
327.00 C* E-ADD1 #G

```

Figure 25-14 User Index Server report (part 5)

```

327.01 CSR      Z-AD01      #H
328.00 CSR      DOWNS4
329.00 CSR      #G
330.00 CSR      ANK,#G      TIME '1'
331.00 CSR      MOVE ENK, #G      ENK, #H
332.00 CSR      ADD 1      #H
333.00 CSR      END
334.00 CSR      ADD 1      #G
335.00 CSR      END
336.00 CSR      CALL 'P0000K'      98
337.00 CSR      C*
338.00 CSR      PARM      ENK
339.00 CSR      GOTO ENDEKX
340.00 CSR      END
341.00 CSR
342.00 CSR      if HELP key pressed, exit to help facility and return.
343.00 CSR
344.00 CSR
345.00 CSR      @@AID      IFM# #FHELP
346.00 CSR      CALL 'P001KLP'      99
347.00 CSR      C*
348.00 CSR      PARM      H000
349.00 CSR      PARM      H000
350.00 CSR      PARM      I000C
351.00 CSR      PARM      SUT00C
352.00 CSR      PARM      I000C
353.00 CSR      GOTO ENDEKX
354.00 CSR      C*
355.00 CSR      END
356.00 CSR
357.00 CSR      if ROLL UP key pressed, load next page of subfile.
358.00 CSR
359.00 CSR
360.00 CSR      @@AID      IFM# #I0010
361.00 CSR      $END      IFM# '1'
362.00 CSR      MOVE ' '      VS001C 1
363.00 CSR      EXER S004
364.00 CSR      C*
365.00 CSR      ELSE
366.00 CSR      Z-AD0$SV11      I1
367.00 CSR      MOVE *BLANK      S00101
368.00 CSR      MOVE *BLANK      S00102
369.00 CSR      MOVE *BLANK      S00103
370.00 CSR      MOVE *BLANK      S00104
371.00 CSR      MOVE *BLANK      S00105
372.00 CSR      I1      ADD 1      #S0010
373.00 CSR      DO $PGSE
374.00 CSR      ADD 1
375.00 CSR      MOVE*IN      I1
376.00 CSR      WRITEVINDEXS      SHIN
377.00 CSR      END
378.00 CSR      Z-AD011      $SV11
379.00 CSR      END
380.00 CSR      GOTO ENDEKX
381.00 CSR      C*
382.00 CSR      END
383.00 CSR
384.00 CSR      if ROLL DOWN key pressed, reset subfile page display.
385.00 CSR
386.00 CSR
387.00 CSR      @@AID      IFM# #F0010
388.00 CSR      MOVE $SV11      #S0010
389.00 CSR      GOTO ENDEKX
390.00 CSR      C*
391.00 CSR      END
392.00 CSR
393.00 CSR      if clear screen pressed, clear screen and return.
394.00 CSR
395.00 CSR
396.00 CSR      @@AID      IFM# #F010
397.00 CSR      EXER S001
398.00 CSR      C*
399.00 CSR      GOTO ENDEKX
400.00 CSR      C*
401.00 CSR      END
402.00 CSR      @AID      IFM# '1'
403.00 CSR      SETCN      0193
404.00 CSR      GOTO ENDEKX
405.00 CSR      C*
406.00 CSR      END
407.00 CSR      ENDEKX      ENDSK
408.00 CSR
409.00 CSR
410.00 CSR      C*****
411.00 CSR      C

```

Figure 25-15 User Index Server report (part 6)

```

412.00 C* SUBROUTINE 200VL - cursor control return values
413.00 C* -----
414.00 C*
415.00 C* by format, find the field to update and move in the
416.00 C* returned value. if the format is a subfile, the record
417.00 C* to change is found in @@RNH.
418.00 C*
419.00 CSE 200VL REGR
420.00 C* -----
421.00 C*
422.00 CSE ##EVAL IFEQ 'BLANK'
423.00 CSE MOVE 'BLANK' ##EVAL
424.00 CSE END
425.00 C*
426.00 C* return values for fields in format VINDEXC
427.00 C*
428.00 CSE ##EVAL IFEQ 'VINDEXC'
429.00 C*
430.00 CSE ##FLEN IFEQ 'ACTION'
431.00 CSE MOVE##EVAL ACTION
432.00 CSE GOTO ENDOVL
433.00 C* -----
434.00 C*
435.00 C*
436.00 CSE ##FLEN IFEQ 'VDCO'
437.00 CSE MOVE##EVAL VDCO
438.00 CSE MOVE##EVAL VDCO001
439.00 CSE GOTO ENDOVL
440.00 C* -----
441.00 CSE END
442.00 CSE END
443.00 C*
444.00 C* return values for fields in format VINDEXS
445.00 C*
446.00 CSE ##EVAL IFEQ 'VINDEXS'
447.00 CSE ANDGTO
448.00 C*
449.00 CSE MOVE##EVAL SHIN
450.00 CSE CHARINDEXES
451.00 CSE IFEQ 'O'
452.00 CSE MOVE##EVAL *IN,1
453.00 C*
454.00 C*
455.00 CSE ##FLEN IFEQ 'SPNCO'
456.00 CSE MOVE##EVAL SPNCO
457.00 CSE GOTO TOOVLA
458.00 C* -----
459.00 CSE END
460.00 C*
461.00 CSE ##FLEN IFEQ 'SFDLO1'
462.00 CSE MOVE##EVAL SFDLO1
463.00 CSE GOTO TOOVLA
464.00 C* -----
465.00 CSE END
466.00 C*
467.00 CSE ##FLEN IFEQ 'SFRPO1'
468.00 CSE MOVE##EVAL SFRPO1
469.00 CSE GOTO TOOVLA
470.00 C* -----
471.00 CSE END
472.00 C*
473.00 CSE ##FLEN IFEQ 'SFRPO2'
474.00 CSE MOVE##EVAL SFRPO2
475.00 CSE GOTO TOOVLA
476.00 C* -----
477.00 CSE END
478.00 CSE TAG
479.00 C* -----
480.00 CSE SETCN
481.00 CSE MOVE##EVAL SHIN
482.00 CSE UPDATVINDEXS
483.00 CSE END
484.00 CSE END
485.00 C*
486.00 C* return values for fields in format VINDEXL
487.00 C*
488.00 CSE ##EVAL IFEQ 'VINDEXL'
489.00 C*
490.00 C*
491.00 CSE ENDOVL ENDS
492.00 C* -----
493.00 C*
494.00 C* SUBROUTINE 2001 - clear fields

```

Figure 25-16 User Index Server report (part 7)

```

495.00 C* -----
496.00 C*
497.00 C* PROCESSING: 1. Reset all video screen and data file fields
498.00 C* for next transaction.
499.00 C* 2. Clear action code only if requested.
500.00 C*
501.00 CSE      8001      BEGIN
502.00 C* -----
503.00 CSE      MOVE 'BLANK'      $1DL01
504.00 CSE      MOVE 'BLANK'      $1RPO1
505.00 CSE      MOVE 'BLANK'      $1RPO2
506.00 CSE      Z-ADD $ZERO      ##RCOL
507.00 CSE      Z-ADD $ZERO      ##RROW
508.00 CSE      Z-ADD $ZERO      $STRNO
509.00 CSE      MOVE 'BLANK'      $FDL01
510.00 CSE      MOVE 'BLANK'      $FNCU
511.00 CSE      MOVE 'BLANK'      $FREPO1
512.00 CSE      MOVE 'BLANK'      $FREPO2
513.00 CSE      MOVE 'BLANK'      $FNCU
514.00 CSE      MOVE 'BLANK'      YDCO
515.00 CSE      MOVE $VL24M      YDL24
516.00 CSE      MOVE '0'      $HIN37
517.00 C* -----
518.00 C*
519.00 C* clear action code only if clear screen action.
520.00 C*
521.00 CSE      @RAID      IFNQ $FCLE
522.00 CSE      MOVE 'ALL'0'      $RESET7
523.00 CSE      MOVE $RESET7      *IN,41
524.00 CSE      MOVE ' '      ACTION 1
525.00 CSE      Z-ADD $ZERO      $STRNO
526.00 CSE      SETON
527.00 CSE      WRITEINDEXC
528.00 CSE      SETOF
529.00 CSE      Z-ADD
530.00 CSE      DO $PGSE
531.00 CSE      ADD 1
532.00 CSE      MOVE $IN      $HIN
533.00 CSE      WRITEINDEXS
534.00 CSE      END
535.00 CSE      Z-ADD 11      $SV11
536.00 CSE      MOVE 'BLANK'      $1CO
537.00 CSE      MOVE 'BLANK'      $1MCU
538.00 CSE      MOVE 'BLANK'      YC0001
539.00 CSE      END
540.00 C* -----
541.00 CSE      END001      ENDER
542.00 C* -----
543.00 C*
544.00 C* SUBROUTINE 8003 - Edit key
545.00 C* -----
546.00 C*
547.00 C* PROCESSING: 1. Initialize error arrays and subfile.
548.00 C* 2. Load inquiry selection.
549.00 C* 3. Load subfile information.
550.00 C* 3. Monitor for empty subfile.
551.00 C*
552.00 CSE      8003      BEGIN
553.00 C* -----
554.00 C*
555.00 C* reset error indicators and arrays.
556.00 C*
557.00 CSE      MOVE 'ALL'0'      $RESET7 39
558.00 CSE      MOVE 'BLANK'      $RESET1 63
559.00 CSE      MOVE $RESET7      *IN,41
560.00 CSE      MOVE $RESET7      $WK,2
561.00 CSE      CLEARERR
562.00 C*
563.00 C* clear the user index to begin with; set flag.
564.00 C* -----
565.00 CSE      CLEAR $IDX1
566.00 CSE      MOVE 'Y'      $START 1
567.00 C*
568.00 C* Load video input field for - company
569.00 C*
570.00 CSE      MOVE $YDCO      $WM
571.00 CSE      ERSE CO012
572.00 C* -----
573.00 C*
574.00 CSE      Z-ADD $NUMR      $WKS 50
575.00 CSE      MOVE $WKS      $1CO
576.00 CSE      MOVE $WKS      YDCO
577.00 C* -----

```

Clear Data Structure containing record format for User Index

Figure 25-17 User Index Server report (part 8)

578.00	C*	determine if any entries exist for that company.			
579.00	C*				
580.00	C*				
581.00	CSE	Z-ADD\$1KEY2	PKKEYL		Load key length, record
582.00	CSE	Z-ADD\$1RECL	PKRECL		length, and key with values
583.00	CSE	MOVE\$IDX1	PKKY		
584.00	C*				
585.00	CSE	CALL 'XOIDX'			
586.00	C*				
587.00	CSE				
588.00	CSE	PARM 'I'	\$LIDX	Idx name lib	
589.00	CSE	PARM 'EQ'	PSACTM	Action code	
590.00	CSE		PSRULE	Action rule	
591.00	CSE		PKKEYL	key length	
592.00	CSE		PKKY	key fields	
593.00	CSE		PKRECL	entry length	
594.00	CSE		PKRECL	entry length	
595.00	C*		PKSTS	error status	
596.00	C*	error of trying to delete but not found.			
597.00	C*				
598.00	CSE	PKSTS	IFNE '0'	NOT FOUND	
599.00	CSE	*IN23	COMP '1'	41 *ERROR*	
600.00	CSE		END		
601.00	C*				
602.00	C*	if indicator 41 on, invalid key for action code.			Check error status
603.00	C*				parameter to see if
604.00	CSE	*IN41	IFEQ '1'		a record was found
605.00	CSE		MOVE '1'	BMK, 2	
606.00	CSE		SETCN		
607.00	CSE		END	93	
608.00	C*				
609.00	C*	if indicator 99 on, record in use.			
610.00	C*				
611.00	CSE	*IN99	IFEQ '1'		
612.00	CSE		MOVE '1'	BMK, 6	
613.00	CSE		SETCN		
614.00	CSE		END	4193	
615.00	C*				
616.00	C*	if not inquiry, skip remainder of subroutine.			
617.00	C*				
618.00	CSE	*IN24	CAREQ '0'	END003	
619.00	C*		-----	-----	
620.00	C*				
621.00	C*	if errors, skip remainder of subroutine.			
622.00	C*				
623.00	CSE	*IN93	CAREQ '1'	END003	
624.00	C*		-----	-----	
625.00	C*				
626.00	C*	initialize subfile indexes.			
627.00	C*				
628.00	CSE	Z-ADD0	I1	50	
629.00	CSE	Z-ADD0	\$GVIL	50	
630.00	CSE	Z-ADD0	\$SPRNO		
631.00	CSE	MOVE '0'	\$SEND	1	
632.00	C*				
633.00	C*	reinitialize subfile display			
634.00	C*				
635.00	CSE	SETCN		31	
636.00	CSE	WRITEVINDEXS		99	
637.00	CSE	SETOP		31	
638.00	C*				
639.00	C*	Load subfile records.			
640.00	C*				
641.00	CSE	EXXR S004			
642.00	C*	-----			
643.00	C*				
644.00	CSE	I1	IFLT \$PGSE		
645.00	CSE	\$PGSE	SUB I1	\$G	
646.00	C*				
647.00	CSE	MOVE *BLANK	SFDLO1		
648.00	CSE	MOVE *BLANK	SFMCU		
649.00	CSE	MOVE *BLANK	SFRCO1		
650.00	CSE	MOVE *BLANK	SFRCO2		
651.00	CSE	MOVE *BLANK	SFMCU		
652.00	CSE	DO \$G			
653.00	CSE	ADD 1	I1		
654.00	CSE	MOVE *IN	SHIN		
655.00	CSE	WRITEVINDEXS			
656.00	CSE	END			
657.00	CSE	Z-ADD11	\$GVIL		
658.00	CSE	END			
659.00	CSE	END003	ENDXR		

Figure 25-18 User Index Server report (part 9)

```

660.00 C*-----
661.00 C*
662.00 C*      copy common subroutine - right justify numeric fields
663.00 C*
664.00 C/COPY JDECPY, C0012
665.00 C*-----
666.00 C*
667.00 C*      SUBROUTINE 2004 - Load video screen data
668.00 C*-----
669.00 C*
670.00 C*      processing: 1.  Move data base information to video screen.
671.00 C*                      All video screen fields are alpha and
672.00 C*                      therefore numeric information must be
673.00 C*                      processed through subroutine c0014 to set
674.00 C*                      proper decimals and provide editing for
675.00 C*                      display on screen.
676.00 C*
677.00 C*                      data fields must be converted from their
678.00 C*                      internal format of month, day and year or
679.00 C*                      julian to the system format using program
680.00 C*                      X0028.
681.00 C*
682.00 CSE      2004      BEGIN
683.00 C*-----
684.00 C*
685.00 C*      Load data field dictionary parameters (one cycle only).
686.00 C*
687.00 CSE      $228      CASEQ ' '      $228
688.00 C*-----
689.00 CSE      END
690.00 C*
691.00 C*      if subfile load completed, skip subroutine.
692.00 C*
693.00 CSE      $2END      IFEQ '1'
694.00 CSE      Z-ADDO      $2PRNO
695.00 CSE      GOTO 2004
696.00 CSE      END
697.00 C*-----
698.00 C*
699.00 C*      save company number for comparison later.
700.00 C*-----
701.00 C*
702.00 CSE      MOVE $100      $200      5
703.00 C*-----
704.00 C*
705.00 C*      Move to output - company description.
706.00 C*
707.00 CSE      MOVE *BLANKS      P228
708.00 CSE      MOVE $100      K228
709.00 CSE      CALL 'LS0010'      81
710.00 C*-----
711.00 CSE      PARM      P228
712.00 CSE      PARM      DE0010
713.00 C*-----
714.00 CSE      NOVELCHNAME      VC0001
715.00 C*-----
716.00 C*
717.00 C*      initialize subfile page control and index.
718.00 C*
719.00 CSE      Z-ADDO      $PG      30
720.00 CSE      Z-ADDO      $2PRNO
721.00 CSE      Z-ADDO $SV11      11
722.00 C*-----
723.00 C*
724.00 C*      read user index until end or subfile page filled.
725.00 C*
726.00 CSE      SETOF      26
727.00 CSE      *IN96      DOWNQ '0'
728.00 C*
729.00 C*      first time through, have already read first record, so skip
730.00 C*      the index logic. (first time through if $START = 'Y'
731.00 C*-----
732.00 CSE      $START      IFEQ 'Y'
733.00 CSE      MOVE ' '      $START
734.00 CSE      ELSE

```


Figure 25–19 User Index Server report (part 10)

```

733.00 C*
734.00 C* successive times through, read next "greater" entry.
735.00 C* =====
736.00 C*
737.00 C*
738.00 C*
739.00 C*
740.00 C*
741.00 C*
742.00 C*
743.00 C*
744.00 C* Call to User
745.00 C* Index to
746.00 C* retrieve next
747.00 C* record that is
748.00 C* greater than
749.00 C* current key
750.00 C* value
751.00 C*
752.00 C*
753.00 C*
754.00 C* if status is '0' then assume not found.
755.00 C* =====
756.00 C*
757.00 C*
758.00 C*
759.00 C*
760.00 C*
761.00 C*
762.00 C*
763.00 C*
764.00 C*
765.00 C*
766.00 C*
767.00 C*
768.00 C*
769.00 C*
770.00 C*
771.00 C*
772.00 C*
773.00 C*
774.00 C*
775.00 C*
776.00 C*
777.00 C*
778.00 C*
779.00 C*
780.00 C*
781.00 C*
782.00 C*
783.00 C*
784.00 C*
785.00 C*
786.00 C*
787.00 C*
788.00 C*
789.00 C*
790.00 C*
791.00 C*
792.00 C*
793.00 C*
794.00 C*
795.00 C*
796.00 C*
797.00 C*
798.00 C*
799.00 C*
800.00 C*
801.00 C*
802.00 C*
803.00 C*
804.00 C*
805.00 C*
806.00 C*
807.00 C*
808.00 C*
809.00 C*
810.00 C*
811.00 C*
812.00 C*
813.00 C*
814.00 C*
815.00 C*

```

```

=====
CALL 'X00IDX'
=====
      Z-ADD@IKYKL      PKYKL      Load key length, record
      Z-ADD@IRBCL      PRBCL      length, and key with values
      MOVE@LSIX1
=====
      CALL 'X00IDX'
      -----
      PARM              $LIX1      index name
      PARM 'I'          PRACTN 1   action code
      PARM 'GT'         PRBULE     action rule
      PARM              PKYKL      key length
      PARM              PKKY       key fields
      PARM              PRBCL      entry length
      PARM              PRBCL      entry
      PARM              PRSTS      error status
      END
      $START

if status is '0' then assume not found.
=====
      GETOF              96
      PRSTS COMP '0'     96 IF GT '0'
=====
      retrieve entry to load data structure.
      =====
      MOVE@PRBCL        @LIX1
      =====
      compare new company to inquiry : if changed, and.
      =====
      $LCO              IFNE $QCO
      SETCN              96
      END

At end of index, set subfile completion flag and set high
intensity attribute on last subfile record.
      *IN96             IFEQ '1'
      MOVE '1'          $GEND
      MOVE ' '           @IN37 1
      GOTO END004
      -----
      END
      =====
      reset record selection flag ($SEL).
      =====
      MOVE '1'          $SEL 1
      =====
      update subfile for selected records.
      =====
      $SEL             IFEQ '1'
      =====
      move to output - description 01
      =====
      MOVE@LLO1         $FLO1
      =====
      move to output - cost center
      =====
      MOVE *BLANK        $GINKR
      MOVE@JMCU          $GINKR
      MOVE TANCU         $OTTF
      MOVE WMCU          $EWBD
      MOVE ENMCU         $EC
      MOVE FMCU          $QSPD
      MOVE GMCU          $QDAT
      MOVE JMCU          $ALR
      MOVE ' '           $ECOR
      MOVE ' '           $DCOR
      -----
      EMSG CO0141
      -----
      $ALR              IFEQ 'L'
      MOVE@SINKR        $FMCU
      ELSE
      MOVE $GINKR       $FMCU

```

Figure 25-20 User Index Server report (part 11)

```

816.00 CSE                      END
817.00 C*****
818.00 C*
819.00 C*      move to output - category code - cost center 01
820.00 C*
821.00 CSE                      MOVE *BLANK          #GINDR
822.00 CSE                      MOVE $IRPO1          #GINDR
823.00 CSE                      MOVE TIRPO1          #OTYP
824.00 CSE                      MOVE WIRPO1          #ENRD
825.00 CSE                      MOVE EIRPO1          #EC
826.00 CSE                      MOVE FIRPO1          #OSPD
827.00 CSE                      MOVE GIRPO1          #OATD
828.00 CSE                      MOVE JIRPO1          #ALR
829.00 CSE                      MOVE ' '            #ECCR
830.00 CSE                      MOVE ' '            #OCCR
831.00 CSE                      EXR C00161
832.00 C*                      ----
833.00 CSE                      #ALR      IFEQ 'L'
834.00 CSE                      NOVEL#GINDR          $IRPO1
835.00 CSE                      ELSE
836.00 CSE                      MOVE #GINDR          $IRPO1
837.00 CSE                      END
838.00 C*****
839.00 C*
840.00 C*      move to output - category code - cost center 02
841.00 C*
842.00 CSE                      MOVE *BLANK          #GINDR
843.00 CSE                      MOVE $IRPO2          #GINDR
844.00 CSE                      MOVE TIRPO2          #OTYP
845.00 CSE                      MOVE WIRPO2          #ENRD
846.00 CSE                      MOVE EIRPO2          #EC
847.00 CSE                      MOVE FIRPO2          #OSPD
848.00 CSE                      MOVE GIRPO2          #OATD
849.00 CSE                      MOVE JIRPO2          #ALR
850.00 CSE                      MOVE ' '            #ECCR
851.00 CSE                      MOVE ' '            #OCCR
852.00 CSE                      EXR C00161
853.00 C*                      ----
854.00 CSE                      #ALR      IFEQ 'L'
855.00 CSE                      NOVEL#GINDR          $IRPO2
856.00 CSE                      ELSE
857.00 CSE                      MOVE #GINDR          $IRPO2
858.00 CSE                      END
859.00 C*****
860.00 C*
861.00 C*      move to output - cost center
862.00 C*
863.00 CSE                      MOVE *BLANK          #GINDR
864.00 CSE                      MOVE $IRPCU          #GINDR
865.00 CSE                      MOVE TIRPCU          #OTYP
866.00 CSE                      MOVE WIRPCU          #ENRD
867.00 CSE                      MOVE EIRPCU          #EC
868.00 CSE                      MOVE FIRPCU          #OSPD
869.00 CSE                      MOVE GIRPCU          #OATD
870.00 CSE                      MOVE JIRPCU          #ALR
871.00 CSE                      MOVE ' '            #ECCR
872.00 CSE                      MOVE ' '            #OCCR
873.00 CSE                      EXR C00161
874.00 C*                      ----
875.00 CSE                      #ALR      IFEQ 'L'
876.00 CSE                      NOVEL#GINDR          $IRPCU
877.00 CSE                      ELSE
878.00 CSE                      MOVE #GINDR          $IRPCU
879.00 CSE                      END
880.00 C*****
881.00 C*
882.00 C*      increment subfile page control and index.
883.00 C*
884.00 CSE                      ADD 1          $PG
885.00 CSE                      ADD 1          I1
886.00 C*
887.00 C*      if subfile page display not set, set subfile page display.
888.00 C*
889.00 CSE                      #GFRNO      IFEQ 0
890.00 CSE                      Z-ADD 1          #GFRNO
891.00 CSE                      END
892.00 C*
893.00 C*      write subfile record and save current subfile index.
894.00 C*
895.00 CSE                      MOVER *IN          $WIN
896.00 CSE                      WRITEVINDEXES
897.00 CSE

```

Figure 25-21 User Index Server report (part 12)

```

008.00 CSE      Z-ADD11      $SV11
009.00 C*
000.00 C*      if subfile page loaded, drop out of subroutine.
001.00 C*
002.00 CSE      $PG      CARRY$PGSZ      ENDD004
003.00 C*
004.00 CSE      END
005.00 CSE      END
006.00 C*-----
007.00 CSE      ENDD004      ENDSR
008.00 C*-----
009.00 C*
010.00 C*      copy common subroutine - format numeric fields for output with override
011.00 C*
012.00 C/COPY JDECFY,CO0161
013.00 C*-----
014.00 C*
015.00 C*      SUBROUTINE S005 - validate and update input data.
016.00 C*
017.00 C*
018.00 C*      Processing: 1. validate all video input. numeric data
019.00 C*                  must be processed thru subroutines CO016 &
020.00 C*                  CO015 to be converted to internal numeric
021.00 C*                  representation (15 digits & decimals).
022.00 C*                  date fields must be converted from system
023.00 C*                  format to their internal format of month,
024.00 C*                  day and year or julian using program X0026.
025.00 C*                  2. update data fields from input and process
026.00 C*                  subfile transaction.
027.00 C*
028.00 CSE      S005      BEGSR
029.00 C*
030.00 C*
031.00 C*      if not addition or change, bypass subroutine
032.00 C*
033.00 CSE      *IN21      IFEQ '0'
034.00 CSE      *IN22      ANDEQ '0'
035.00 CSE      GOTO ENDD005
036.00 C*
037.00 CSE      END
038.00 C*
039.00 C*      process all subfile transactions.
040.00 C*
041.00 CSE      MOVE ' '      $WRT      1
042.00 CSE      Z-ADD1      $IX      70
043.00 CSE      SETOF
044.00 CSE      *IN96      DOWNEQ '0'
045.00 CSE      *IN99      ANDEQ '0'
046.00 CSE      $IX      ANDLE$SV11
047.00 CSE      MOVE$RESET      *IN,41
048.00 CSE      $IX      CHAININDEXES
049.00 CSE      *IN96      IFEQ '0'
050.00 CSE      *IN99      ANDEQ '0'
051.00 C*
052.00 C*      Load video input field for - cost center
053.00 C*
054.00 CSE      MOVE$HMCU      $FI
055.00 CSE      ERSE CO042
056.00 C*
057.00 CSE      MOVE $RADJ      $INCU
058.00 C*
059.00 C*      determine if prior record existed in user index.
060.00 C*
061.00 C*
062.00 CSE      Z-ADD$INDEXL      $KEYL
063.00 CSE      Z-ADD$INDEXL      $KEYL
064.00 CSE      MOVE$INDEXL      $KEY
065.00 C*
066.00 CSE      CALL 'X00IDX'
067.00 C*
068.00 CSE      PARM      $INDEX      idx name/lib
069.00 CSE      PARM '1'      $ACTION      action code
070.00 CSE      PARM 'EQ'      $RULE      action rule
071.00 CSE      PARM      $KEYL      key length
072.00 CSE      PARM      $KEY      key fields
073.00 CSE      PARM      $INDEXL      entry length
074.00 CSE      PARM      $KEY      entry
075.00 CSE      PARM      $STAT      error status
076.00 C*
077.00 C*      if no data and prior record existed, delete old record.
078.00 C*
079.00 C*

```

Loading of
 parameters
 and call to
 User Index to
 see if a record
 exists

Z-ADD\$INDEXL	\$KEYL	
Z-ADD\$INDEXL	\$KEYL	
MOVE\$INDEXL	\$KEY	
CALL 'X00IDX'		
PARM	\$INDEX	idx name/lib
PARM '1'	\$ACTION	action code
PARM 'EQ'	\$RULE	action rule
PARM	\$KEYL	key length
PARM	\$KEY	key fields
PARM	\$INDEXL	entry length
PARM	\$KEY	entry
PARM	\$STAT	error status

Figure 25-22 User Index Server report (part 13)

980.00	CSR	IFNE '0'	Check error status parameter to see if record has found	
981.00	CSR	IFMTCU	ANDSQ *BLANK	
982.00	C*			
983.00	CSR			
984.00	C*			
985.00	CSR			
986.00	CSR			
987.00	CSR			
988.00	CSR			
989.00	CSR			
990.00	CSR			
991.00	CSR			
992.00	CSR			
993.00	C*			
994.00	CSR			
995.00	C*			
996.00	C*			
997.00	C*			
998.00	CSR	IFNE *BLANK		
999.00	C*			
1000.00	C*			
1001.00	C*			
1002.00	C*			
1003.00	C*			
1004.00	CSR	NOVELSPDL01	\$IDL01	
1005.00	C*			
1006.00	C*			
1007.00	C*			
1008.00	CSR	ANDL01	IFNE *HE	
1009.00	CSR	\$IDL01	ANDSQ *BLANK	
1010.00	CSR		MOVE '1'	
1011.00	CSR		SETON	4293
1012.00	CSR		END	
1013.00	C*			
1014.00	C*			
1015.00	C*			
1016.00	C*			
1017.00	CSR	NOVELSPMTCU	\$FI	
1018.00	CSR	EXSR C0042		
1019.00	C*			
1020.00	CSR	MOVE \$EADN	\$IMCU	
1021.00	C*			
1022.00	C*			
1023.00	C*			
1024.00	C*			
1025.00	CSR	NOVELSPRPO1	\$IRPO1	
1026.00	C*			
1027.00	C*			
1028.00	C*			
1029.00	CSR	\$IRPO1	IFNE *BLANK	
1030.00	CSR	DWRPO1	IFNE *BLANK	
1031.00	CSR	NOVELADWRPO1	\$40	
1032.00	CSR	NOVELA\$40	\$IRPO1	
1033.00	CSR	\$40,1	IFNE ' '	
1034.00	CSR		MOVE ' '	
1035.00	CSR		\$40,1	
1036.00	CSR	\$M	Z-ADD2	\$M
1037.00	CSR	\$40,\$M	DONLE\$40	
1038.00	CSR		IFNE ' '	
1039.00	CSR		MOVE ' '	
1040.00	CSR		\$40,\$M	
1041.00	CSR		END	
1042.00	CSR		ADD 1	
1043.00	CSR		END	
1044.00	CSR		NOVELA\$40,2	\$IRPO1
1045.00	CSR		END	
1046.00	C*			
1047.00	C*			
1048.00	C*			
1049.00	CSR	AREP01	IFNE *BLANK	
1050.00	CSR		NOVELAAREP01	\$40
1051.00	CSR		MOVE \$HVAL	\$AV
1052.00	CSR		EXSR C997	
1053.00	C*			
1054.00	CSR		MOVE ' '	\$ERTST
1055.00	CSR		MOVE *BLANK	\$WKL0 10
1056.00	CSR		NOVEL\$IRPO1	\$WKL0
1057.00	CSR	\$AV,1	IFNE \$HVAL	
1058.00	CSR	\$WKL0	LODUP\$AV	81
1059.00	CSR	*IN01	IFNE '0'	
1060.00	CSR		MOVE '1'	
1061.00	CSR		END	\$ERTST
1062.00	CSR	\$ERTST	IFNE '1'	
1063.00	CSR		MOVE '1'	\$WKL,07

Figure 25-23 User Index Server report (part 14)

1146.00	C*					
1147.00	C*	edit upper and lower range - category code - cost center 02				
1148.00	C*					
1149.00	CWK	LRUP02	IFHE 'BLANK			
1150.00	CWK		MOVE '1'	\$ERTGT		
1151.00	CWK	\$LRP02	IFHE LRUP02			
1152.00	CWK	\$LRP02	ADDLELRUP02			
1153.00	CWK		MOVE	\$ERTGT		
1154.00	CWK		END			
1155.00	CWK	\$ERTGT	IFEQ '1'			
1156.00	CWK		MOVE '1'			
1157.00	CWK		SETON		4493	
1158.00	CWK		END			
1159.00	CWK		END			
1160.00	C*					
1161.00	C*	edit from descriptive titles - category code - cost center 02				
1162.00	C*					
1163.00	CWK	RERP02	IFHE 'BLANK			
1164.00	CWK		CLEAR100050			
1165.00	CWK		MOVE ' '	\$ERTGT		
1166.00	CWK		MOVELELRERP02	\$ONY		
1167.00	CWK		MOVE RERP02	\$ONT		
1168.00	CWK		MOVE \$LRP02	\$ONY		
1169.00	CWK		CALL 'X0005		81	
1170.00	C*		-----			
1171.00	CWK	PANN		100050		
1172.00	CWK	#USER	IFEQ '1'			
1173.00	CWK		MOVE '1'	SMK,09		
1174.00	CWK		SETON		4493	
1175.00	CWK		END			
1176.00	CWK		END			
1177.00	C*					
1178.00	C*					
1179.00	C*	if no errors, update user index.				
1180.00	C*	=====				
1181.00	C*					
1182.00	CWK	*IND3	IFEQ '0'			
1183.00	C*					
1184.00	CWK		Z-ADD\$1KEYL	PKKEYL		
1185.00	CWK		Z-ADD\$1RECL	PKRECL		
1186.00	CWK		MOVE\$1IDX	PKY		
1187.00	CWK		MOVE\$1IDX	PKREC		
1188.00	C*					
1189.00	CWK		IFEQ '0'			
1190.00	CWK	\$1MTCU	ANDEQ\$MTCU			
1191.00	C*					
1192.00	CWK		CALL 'X0010X'			
1193.00	C*		-----			
1194.00	CWK	PANN		\$1IDX	Index Name	
1195.00	CWK	PANN 'C'		PSACTN	Action Code	
1196.00	CWK	PANN		PSRULE	Function Rule	
1197.00	CWK	PANN		PKKEYL	Key Length	
1198.00	CWK	PANN		PKY	Key	
1199.00	CWK	PANN		PKRECL	Record Length	
1200.00	CWK	PANN		PKREC	Record	
1201.00	CWK	PANN		PSSTS	Status	
1202.00	C*					
1203.00	CWK		ELSE			
1204.00	C*					
1205.00	CWK		CALL 'X0010X'			
1206.00	C*		-----			
1207.00	CWK	PANN		\$1IDX	idx name/lib	
1208.00	CWK	PANN 'I'		PSACTN	Action Code	
1209.00	CWK	PANN 'EQ'		PSRULE	Action Rule	
1210.00	CWK	PANN		PKKEYL	Key Length	
1211.00	CWK	PANN		PKY	Key Fields	
1212.00	CWK	PANN		PKRECL	Entry Length	
1213.00	CWK	PANN		PKREC	Entry	
1214.00	CWK	PANN		PSSTS	Error Status	
1215.00	C*					
1216.00	CWK		IFEQ '0'			
1217.00	CWK		MOVE '1'	SMK,2	4193	
1218.00	CWK		SETON			
1219.00	CWK		ELSE			
1220.00	C*					
1221.00	CWK		CALL 'X0010X'			
1222.00	C*		-----			
1223.00	CWK	PANN		\$1IDX	idx name/lib	
1224.00	CWK	PANN 'A'		PSACTN	Action Code	
1225.00	CWK	PANN		PSRULE	Action Rule	
1226.00	CWK	PANN		PKKEYL	Key Length	
1227.00	CWK	PANN		PKY	Key Fields	
1228.00	CWK	PANN		PKRECL	Entry Length	
1229.00	CWK	PANN		PKREC	Entry	
1230.00	CWK	PANN		PSSTS	Error Status	

Figure 25-24 User Index Server report (part 15)

```

1231.00 C*
1232.00 CSE MOVE '1' $MKT
1233.00 CSE END
1234.00 CSE END
1235.00 CSE END
1236.00 C*
1237.00 CSE *IN93 IFEQ '1'
1238.00 CSE $GFNO ANDEQ *ZERO
1239.00 CSE Z-ADD11 $GFNO
1240.00 CSE END
1241.00 C*
1242.00 CSE END
1243.00 C*
1244.00 C* if errors, set subfile next change flag.
1245.00 C*
1246.00 CSE *IN93 IFEQ '1'
1247.00 CSE SETCN 32
1248.00 CSE END
1249.00 C*
1250.00 C* update all subfile records read.
1251.00 C*
1252.00 CSE MOVEA*IN SMIN
1253.00 CSE UPDATVINDEX 81
1254.00 CSE SETOF 32
1255.00 C*
1256.00 C* read next subfile record.
1257.00 C*
1258.00 CSE ADD 1 $QIX
1259.00 CSE END
1260.00 CSE END
1261.00 C*
1262.00 C* if error detected on a add, change action code to 'c'
1263.00 C*
1264.00 CSE *IN93 IFEQ '1'
1265.00 CSE $MKT ANDEQ '1'
1266.00 CSE MOVE 'C' ACTION
1267.00 CSE END
1268.00 C*
1269.00 CSE END005 ENDGR
1270.00 C*****
1271.00 C*
1272.00 C* copy common subroutine - right Adjust Alphanumeric field
1273.00 C*
1274.00 C/COPY JDECPY,C0042
1275.00 C*****
1276.00 C*
1277.00 C* copy common subroutine - build Allowed values work Array
1278.00 C*
1279.00 C/COPY JDECPY,C007
1280.00 C*****
1281.00 C*
1282.00 C* SUBROUTINE S010 - update data base
1283.00 C*
1284.00 C*
1285.00 C* processing: 1. update data base file for delete action.
1286.00 C*
1287.00 CSE S010 BEGR
1288.00 C*
1289.00 C*
1290.00 C* if delete action, delete all records by primary partial key.
1291.00 C*
1292.00 CSE *IN23 IFEQ '1'
1293.00 CSE Z-ADD$KEY2 PKEY1
1294.00 CSE Z-ADD$RECL PKRECL
1295.00 C*
1296.00 CSE Deletion of CALL 'X001EX'
1297.00 C*
1298.00 CSE PARM $INDEX idx name/ldb
1299.00 CSE PARM 'D' PRACTN action
1300.00 CSE PARM 'EQ' PRRULE action rule
1301.00 CSE PARM PKEY1 key length
1302.00 CSE PARM PKY key fields
1303.00 CSE PARM PKRECL entry length
1304.00 CSE PARM PKREC entry
1305.00 CSE PARM PKSTS error status
1306.00 CSE END
1307.00 C*
1308.00 C* clear data field for next transaction
1309.00 C*
1310.00 CSE MOVE $FCLR @RAID
1311.00 CSE EXSE S001
1312.00 C*
1313.00 CSE END010 ENDGR

```

Load key length and record length for deletion

Deletion of record from User Index

CALL 'X001EX'		
PARM \$INDEX	idx name/ldb	
PARM 'D'	PRACTN	action
PARM 'EQ'	PRRULE	action rule
PARM PKEY1	PKEY1	key length
PARM PKY	PKY	key fields
PARM PKRECL	PKRECL	entry length
PARM PKREC	PKREC	entry
PARM PKSTS	PKSTS	error status
END		

Figure 25-25 User Index Server report (part 16)

1314.00	C*	*****			
1315.00	C*				
1316.00	C*	SUBROUTINE 9998 - Load dictionary parameters.			
1317.00	C*	-----			
1318.00	C*				
1319.00	CSR	9998	DEGRN		
1320.00	C*	----	-----		
1321.00	C*				
1322.00	C*	dictionary parameters for - description of			
1323.00	C*				
1324.00	C*				
1325.00	CSR	MOVE *BLANK	FEDTRAI		
1326.00	CSR	MOVE *BLAI	FEDTRAI		
1327.00	CSR	CALL 'X9800E'		51	
1328.00	C*	-----			
1329.00	CSR	PARM	I9800E		
1330.00	CSR	FREEH	IFREQ 'O'		
1331.00	CSR	MOVE FEDCEK	EDDL01	40	
1332.00	CSR	MOVE FEDTAT	TWDL01	1	
1333.00	CSR	MOVE FEKC	EDDL01	1	
1334.00	CSR	MOVE EEDTAG	CDL01	40	
1335.00	CSR	MOVE FEDTAD	GDLL01	10	
1336.00	CSR	MOVE FECEEC	FEDL01	1	
1337.00	CSR	MOVE FESEY	GDLL01	4	
1338.00	CSR	MOVE FERT	EDDL01	2	
1339.00	CSR	MOVE FEVAL	EDDL01	40	
1340.00	CSR	MOVE FEVAL	ADL01	40	
1341.00	CSR	MOVE FEVAL	LADL01	40	
1342.00	CSR	MOVE FEVAL	EDDL01	40	
1343.00	CSR	MOVE FEEDWE	WEDL01	30	
1344.00	CSR	MOVE FELE	JEDL01	1	
1345.00	CSR	MOVE FEENIX	EDDL01	20	
1346.00	CSR	Z-ADD1	#EDL01	110	
1347.00	CSR	MOVE FADL01	#1		
1348.00	CSR	DO #A			
1349.00	CSR	MULT 10	#EDL01		
1350.00	CSR	END			
1351.00	CSR	END			
1352.00	C*	-----			
1353.00	C*	dictionary parameters for - cost center			
1354.00	C*				
1355.00	C*				
1356.00	CSR	MOVE *BLANK	FEDTRAI		
1357.00	CSR	MOVE *MCU	FEDTRAI		
1358.00	CSR	CALL 'X9800E'		51	
1359.00	C*	-----			
1360.00	CSR	PARM	I9800E		
1361.00	CSR	FREEH	IFREQ 'O'		
1362.00	CSR	MOVE FEDCEK	EDMCU	40	
1363.00	CSR	MOVE FEDTAT	TWMCU	1	
1364.00	CSR	MOVE FEKC	EDMCU	1	
1365.00	CSR	MOVE EEDTAG	CMCU	40	
1366.00	CSR	MOVE FEDTAD	GMCU	10	
1367.00	CSR	MOVE FECEEC	FMCU	1	
1368.00	CSR	MOVE FESEY	GMCU	4	
1369.00	CSR	MOVE FERT	EDMCU	2	
1370.00	CSR	MOVE FEVAL	DMCU	40	
1371.00	CSR	MOVE FEVAL	AMCU	40	
1372.00	CSR	MOVE FEVAL	LMCU	40	
1373.00	CSR	MOVE FEVAL	CMCU	40	
1374.00	CSR	MOVE FEEDWE	WMCU	30	
1375.00	CSR	MOVE FELE	JWMCU	1	
1376.00	CSR	MOVE FEENIX	DMCU	20	
1377.00	CSR	Z-ADD1	#MCU	110	
1378.00	CSR	MOVE FMCU	#A		
1379.00	CSR	DO #A			
1380.00	CSR	MULT 10	#MCU		
1381.00	CSR	END			
1382.00	CSR	END			
1383.00	C*	-----			
1384.00	C*	dictionary parameters for - category code - cost center 01			
1385.00	C*				
1386.00	C*				
1387.00	CSR	MOVE *BLANK	FEDTRAI		
1388.00	CSR	MOVE *R01	FEDTRAI		
1389.00	CSR	CALL 'X9800E'		51	
1390.00	C*	-----			
1391.00	CSR	PARM	I9800E		
1392.00	CSR	FREEH	IFREQ 'O'		
1393.00	CSR	MOVE FEDCEK	EDR01	40	
1394.00	CSR	MOVE FEDTAT	TWR01	1	
1395.00	CSR	MOVE FEKC	EDR01	1	

Figure 25-26 User Index Server report (part 17)

1396.00	CSE	MOVE FEDTAG	CWEP01	40
1397.00	CSE	MOVE FEDTAD	CWEP01	10
1398.00	CSE	MOVE FECDSC	FWEP01	1
1399.00	CSE	NOVELFESY	SWEP01	4
1400.00	CSE	MOVE FEET	SWEP01	2
1401.00	CSE	MOVE FEUVAL	DWEP01	40
1402.00	CSE	MOVE FEVAL	AWEP01	40
1403.00	CSE	MOVE FELVAL	LWEP01	40
1404.00	CSE	MOVE FEUVAL	OWEP01	40
1405.00	CSE	MOVE FEEDWN	WWEP01	30
1406.00	CSE	MOVE FELR	JWEP01	1
1407.00	CSE	MOVE FENHIX	HWEP01	20
1408.00	CSE	Z-ADD1	#WEP01	110
1409.00	CSE	MOVE FWEP01	#A	
1410.00	CSE	DO #A		
1411.00	CSE	MULT 10	#WEP01	
1412.00	CSP	END		
1413.00	CSE	END		
1414.00	C*	-----		
1415.00	C*	dictionary parameters for - category code - cost center 02		
1416.00	C*			
1417.00	C*			
1418.00	CSE	MOVE *BLANK	FEDTA1	
1419.00	CSE	NOVEL'EP02'	FEDTA1	
1420.00	CSE	CALL 'X9800K'		81
1421.00	C*	-----		
1422.00	CSE	PARM	I9800K	
1423.00	CSE	IFEQ '0'		
1424.00	CSE	MOVE FECDSC	SWEP02	40
1425.00	CSE	MOVE FEDTAT	TWEP02	1
1426.00	CSE	MOVE FEFC	SWEP02	1
1427.00	CSE	MOVE FEDTAG	CWEP02	40
1428.00	CSE	MOVE FEDTAD	CWEP02	10
1429.00	CSE	MOVE FECDSC	FWEP02	1
1430.00	CSE	NOVELFESY	SWEP02	4
1431.00	CSE	MOVE FEET	SWEP02	2
1432.00	CSE	MOVE FEUVAL	DWEP02	40
1433.00	CSE	MOVE FEVAL	AWEP02	40
1434.00	CSE	MOVE FELVAL	LWEP02	40
1435.00	CSE	MOVE FEUVAL	OWEP02	40
1436.00	CSE	MOVE FEEDWN	WWEP02	30
1437.00	CSE	MOVE FELR	JWEP02	1
1438.00	CSE	MOVE FENHIX	HWEP02	20
1439.00	CSE	Z-ADD1	#WEP02	110
1440.00	CSE	MOVE FWEP02	#A	
1441.00	CSE	DO #A		
1442.00	CSE	MULT 10	#WEP02	
1443.00	CSE	END		
1444.00	CSE	END		
1445.00	C*	-----		
1446.00	C*	dictionary parameters for - company		
1447.00	C*			
1448.00	C*			
1449.00	CSE	MOVE *BLANK	FEDTA1	
1450.00	CSE	NOVEL'00'	FEDTA1	
1451.00	CSE	CALL 'X9800K'		81
1452.00	C*	-----		
1453.00	CSE	PARM	I9800K	
1454.00	CSE	IFEQ '0'		
1455.00	CSE	MOVE FECDSC	SWC0	40
1456.00	CSE	MOVE FEDTAT	TWC0	1
1457.00	CSE	MOVE FEFC	SWC0	1
1458.00	CSE	MOVE FEDTAG	CWC0	40
1459.00	CSE	MOVE FEDTAD	CWC0	10
1460.00	CSE	MOVE FECDSC	FWC0	1
1461.00	CSE	NOVELFESY	SWC0	4
1462.00	CSE	MOVE FEET	SWC0	2
1463.00	CSE	MOVE FEUVAL	DWC0	40
1464.00	CSE	MOVE FEVAL	AWC0	40
1465.00	CSE	MOVE FELVAL	LWC0	40
1466.00	CSE	MOVE FEUVAL	OWC0	40
1467.00	CSE	MOVE FEEDWN	WWC0	30
1468.00	CSE	MOVE FELR	JWC0	1
1469.00	CSE	MOVE FENHIX	HWC0	20
1470.00	CSE	Z-ADD1	#WC0	110
1471.00	CSE	MOVE FWC0		
1472.00	CSE	DO #A		
1473.00	CSE	MULT 10	#WC0	
1474.00	CSE	END		

Figure 25-27 User Index Server report (part 18)

```

1475.00 CSE      END
1476.00 C*
1477.00 C*
1478.00 C*      create or clear the demonstration user index
1479.00 C*      =====
1480.00 C*
1481.00 CSE      MOVE 'BLANKS'      PSEEN
1482.00 CSE      CALL 'J98CTOBY'      99
1483.00 C*
1484.00 C*
1485.00 CSE      PARM 'INDEX'      'PSOBT 10
1486.00 CSE      PARM 'QTEMP'      'PSLIB 10
1487.00 CSE      PARM 'USRIDX'      'PSTYP 7
1488.00 CSE      PARM 'NONE'      'PSMR 10
1489.00 CSE      PARM 'NONE'      'PSAUT 10
1490.00 CSE      PARM 'NONE'      'PSEEN 1
1491.00 C*
1492.00 C*      if it doesn't exist, create it.
1493.00 CSE      PSEEN IFEQ '1'
1494.00 C*
1495.00 CSE      CALL 'QUSCTUT'      99
1496.00 C*
1497.00 CSE      PARM 'INDEX'      $INDEX      idx name/lib
1498.00 CSE      PARM 'BLANKS'      PSACTN 10      extend Attrib
1499.00 CSE      PARM 'F'      PSXLEN 1      length Attrib
1500.00 CSE      PARM '1'      $IRECL      entry length
1501.00 CSE      PARM '1'      PSKIND 1      key insertn
1502.00 CSE      PARM '1'      $KEYL      key length
1503.00 CSE      PARM 'O'      PSINUP 1      delay update
1504.00 CSE      PARM 'O'      PSOPTM 1      optm = random
1505.00 CSE      PARM 'ALL'      PSIDNO 10      public Auth
1506.00 CSE      PARM $TEXT      PSTEXT 50      index descr
1507.00 C*
1508.00 C*      if it does exist, clear it.
1509.00 C*
1510.00 CSE      ELSE
1511.00 C*
1512.00 CSE      Z-ADD$KEYL      PSKEYL
1513.00 CSE      Z-ADD$IRECL      PSIRECL
1514.00 CSE      MOVE 'BLANK'      PSKEY
1515.00 C*
1516.00 CSE      CALL 'XOCDIX'
1517.00 C*
1518.00 CSE      PARM 'D'      $INDEX      idx name/lib
1519.00 CSE      PARM 'EQ'      PSACTN 1      Action
1520.00 CSE      PARM 'EQ'      PSRULE 2      Action rule
1521.00 CSE      PARM 'EQ'      PSKEYL 30      key length
1522.00 CSE      PARM 'EQ'      PSKEY 120      key fields
1523.00 CSE      PARM 'EQ'      PSIRECL 30      entry length
1524.00 CSE      PARM 'EQ'      PSREC 120      entry
1525.00 CSE      PARM 'EQ'      PSSTS 1      error status
1526.00 C*
1527.00 CSE      END
1528.00 C*
1529.00 C*
1530.00 C*      set subroutine execution flag.
1531.00 C*
1532.00 CSE      MOVE '1'      $998      1
1533.00 C*
1534.00 CSE      END998      ENDR
1535.00 C*
1536.00 C*
1537.00 C*      SUBROUTINE 9999 - housekeeping
1538.00 C*
1539.00 C*
1540.00 C*      Processing:
1541.00 C*      1. Load video screen text.
1542.00 C*      2. Retrieve screen title data area, test
1543.00 C*      for unauthorized access, center video
1544.00 C*      title and move to video screen.
1545.00 C*      3. initialize key list.
1546.00 C*      4. Load roll keys.
1547.00 C*      5. Passed parameters.
1548.00 C*      6. load error message array.
1549.00 C*      7. initialize subfile display.
1550.00 CSE      9999      BEGIN
1551.00 C*
1552.00 C*
1553.00 C*      required program parameters.
1554.00 C*
1555.00 C*      . . . NO parameters passed
1556.00 C*

```

Check to see if User Index already exists

Create User Index if User Index did not already exist

Load key length, record length, and key to clear User Index if it already exists

Delete all records from User Index

Figure 25-28 User Index Server report (part 19)

```

1557.00 C*      test for auto inquiry function.
1558.00 C*
1559.00 CSE      $AUTO      IFNE *BLANK      $AUTO      1
1560.00 CSE      MOVE '1'
1561.00 CSE      END
1562.00 C*-----
1563.00 C*      Load video screen text.
1564.00 C*
1565.00 CSE      NOVELL$FILE      PKEY      10
1566.00 CSE      Z-ADD066      PVTZ#      30
1567.00 C/COPY JDECPY,COOGE
1568.00 C*-----
1569.00 C*
1570.00 C*      Load error messages array.
1571.00 C*
1572.00 C*
1573.00 CSE      MOVE '0001'      ENK,01      INV Action
1574.00 CSE      MOVE '0002'      ENK,02      INV Key
1575.00 CSE      MOVE '0003'      ENK,03      INV blanks
1576.00 CSE      MOVE '0004'      ENK,04      INV Date
1577.00 CSE      MOVE '0005'      ENK,05      INV Next Rdr
1578.00 CSE      MOVE '0007'      ENK,06      IN USG
1579.00 CSE      MOVE '0025'      ENK,07      INV Values
1580.00 CSE      MOVE '0026'      ENK,08      INV MCV
1581.00 CSE      MOVE '0027'      ENK,09      INV Desc ttl
1582.00 C*-----
1583.00 C*
1584.00 C*      Load invalid action code array.
1585.00 C*
1586.00 CSE      MOVE'      '      @NAC
1587.00 C*-----
1588.00 C*
1589.00 C*      initialize subfile display.
1590.00 C*
1591.00 CSE      Z-ADDO      I1
1592.00 CSE      Z-ADDS      $PAGE      30
1593.00 CSE      DO $PAGE
1594.00 CSE      ADD 1      I1
1595.00 CSE      MOVE IN      @MIN
1596.00 CSE      WRITEINDEXS
1597.00 CSE      END
1598.00 CSE      Z-ADD11      $SV11
1599.00 C*-----
1600.00 C*
1601.00 C*      Load system data.
1602.00 C*
1603.00 CSE      TIME      $WEEK12      120
1604.00 CSE      MOVE $WEEK12      $QEDT      60
1605.00 C*-----
1606.00 CSE      ENDD999      ENDDK

```

This chapter contains these topics:

- [Section 26.1, "About File Servers"](#)
- [Section 26.2, "What is a File Server?"](#)
- [Section 26.3, "What are the Advantages of Using a File Server?"](#)
- [Section 26.4, "What are the Disadvantages of Using a File Server?"](#)
- [Section 26.5, "How Does a File Server Function?"](#)
- [Section 26.6, "What Are Control Parameters?"](#)
- [Section 26.7, "What Are Returned Parameters?"](#)
- [Section 26.8, "Implementing a File Server"](#)
- [Section 26.9, "Searching for Key Lists"](#)
- [Section 26.10, "Tips when Using File Servers"](#)
- [Section 26.11, "Commonly Used File Servers"](#)

26.1 About File Servers

- Sometimes called I/O servers.
- Allow you to enhance the processing time of your program.
- Ease the maintenance of your programs by making your system more modular.

Eventually, every program should perform database functions using either a file server or a functional server.

Note: All logical files are accessed through servers by their based-on file. Embedded in one server, there may be many access paths available.

26.2 What is a File Server?

A file server, or I/O server, is a server that performs RPG database operations.

This type of server has no effect on program logic, but it isolates the actual database from the application program. Once you implement a file server into a program, the file specification is no longer required.

26.2.1 Types of File Servers

There are three types of file servers you can use:

File Server	Description
XS	Input-Only/Caching Servers They can be used in place of a simple CHAIN operation for input only. You may request descriptions only, or the entire record. They provide caching logic to decrease physical I/O for duplicate requests.
XF	Input/Output File Servers They allow you to replace all RPG database operation codes for a given file with program calls. They can perform such functions as READ, CHAIN, and SETLL to a file.
X	Special Scrub & Edit Servers They can accept cost center, account numbers, numeric fields, or a data string in any valid data entry or file format, convert them to any format, validate the existence of the master record, and optionally pass the master record or the scrubbed data back to the calling program.

26.3 What are the Advantages of Using a File Server?

The advantages of using a file server are

- Minimized maintenance of your software
- Ability to change a physical file without having to make changes to application programs that use the file, or even having to recompile them
- Use of versions in future releases to allow programs from a previous release to run against a changed database
- Smoother transition from an old database to a new database. Instead of applying all new programs, you will only have to apply a new set of file servers
- Ability to implement one file server at a time without affecting the rest of your system

26.4 What are the Disadvantages of Using a File Server?

The disadvantages are:

- A file server is minutely slower because you are performing an external call to the server from your program
- File server programs tend to be large

File servers are designed to perform all database functions that can be performed directly.

26.5 How Does a File Server Function?

A file server performs all the interfaces between a program and file. After you load the control parameters, which contain information about the record you are retrieving, the file server converts the control parameters and returns a record to the program.

If you plan to use any of the file server programs and you are asking them to return the database record, you must use the record image /COPY member that the corresponding I/O server uses. The /COPY member has the following naming convention:

I(file name) (release level).

For example: The copy member for the F0101 record image should appear as:

I/COPY JDECPY, I010171

Note: Some technical file servers (X9800E, X0005) have a /COPY member with the naming convention:

I(file name)(special character)

I/COPY JDECPY, I0005U

A file server may be called with two parameters:

Figure 26–1 Two Parameters for Calling a File Server

```
For example:  CALL      'XF0101'      81
               ----      -
               PARM      PS@@@1
               PARM      I0101
```

PARAM	Description
PS@@@1	Contains all of the control parameters. It is contained in copy module I00XFSRV, and it is common to all file servers.
I(file name)	Contains the record image for updates and writes specific for each I/O server. It is an exact duplicate of the record image. It is contained in the copy module I(file name) (release level).

26.6 What Are Control Parameters?

The parameter PS@@@1 is a Data Structure which contains all the control parameters for the file server. All control parameters, except the format name, are cleared every time the server returns control to the calling program. You must set the parameter values every time the server is called unless you are satisfied with the default values.

PARAM (Length)	Description
@@ACCS (1)	The type of access to the file. The valid values are K for Keyed access (default), R for relative record number access and S for sequential access (DREAM Writer).

PARM (Length)	Description
@@OPER (10)	<p>The operation to be performed to the file. The valid values are presented below:</p> <p>CHAIN Chain by key list or RRN</p> <p>CLOSE Close the access path</p> <p>DELET Delete current record or by key or RRN</p> <p>EXIST Test existence of record by key</p> <p>OPEN Open access path (optional)</p> <p>READ Read next record</p> <p>READE Read next equal key</p> <p>READP Read previous record</p> <p>REDPE Read previous equal key</p> <p>SETGT Set greater than key</p> <p>SETHV Set greater than with *HIVAL</p> <p>SETLL Set lower limit by key</p> <p>SETLV Set lower limit with *LOVAL</p> <p>UPDAT Update locked record</p> <p>UPDATC Update current record</p> <p>WRITE Write new record</p> <p>UNLCK Unlock current record</p>
@@LOCK (1)	<p>Whether you do or do not want to lock the record. The valid values are Y to lock the record (default) or N to not lock the record.</p> <p>Note: This parameter is only valid for chain and read operations, and is ignored for all other operations. You should set it to N when reading records not to be updated.</p>
@@CHGR (1)	<p>Servers allow records to be read without lock and then be updated (UPDATC). In this situation, the record will be re-read before it is updated and if it has changed since it was last read, action will have to be taken. This parameter determines what that action will be. The valid values are:</p> <p>N – Do not update the record. A return code (RC) is returned and it comes up to the program to determine what action to take. (default)</p> <p>O – Overlay the changed record with the values you are currently updating. This will cause the changes made by the other user to be lost.</p> <p>W – Call the Changed Record Window (P0000U) that will prompt you for what action to take. Use this option with interactive programs only.</p>
@@KLST (10)	<p>The key list that will be used for access. The calling program does not specify a logical file so that the application program is isolated from any database changes. A value must be specified unless you are accessing the file by relative record number or sequentially (@@ACCS = R or S).</p> <p>Note: The server maintains status information for each access path, so multiple paths can be accessed through the server in one program. The @@KLST parameter determines which access path is affected by the current call to the server.</p>

PARM (Length)	Description
@@KNUM (5,0)	Specifies how many key fields in the list will be used for the current operation. This allows you to perform a read equal by a partial key. The valid values are 1 through the number of fields in the key, and blank for operations not requiring a key.
@@FMT (10)	Specifies the release level the program is expecting. This field does not get cleared upon returning from the server, so it can be set once in S999.
@@#RRN (9,0)	The relative record number for RRN access.
I (file name)	Record image for updates and writes. This parameter is optional for OPEN, CLOSE, DELET, SETHV, SETLV, and UNLCK operations.

Access paths are opened automatically when the first operation is performed. Therefore, it is not necessary to call the server with the OPEN operation.

A server normally remains active as long as the calling program is active. If you know you will need a server for only a limited period of time and do not want it taking up space in the PAG, you can call the server the @@OPER parameter blank, this causes the server to return and end.

26.7 What Are Returned Parameters?

When the file server returns the record to the program, there are several parameters associated with it.

PARM (Length)	Description
@@IOR(3)	The I/O return code. The possible values are: blank – No errors NF – Record not found NE – Not equal for a READE operation EOF – End of file EQ – Equal for a SETLL operation BOF – Beginning of file RL – Record Locked, could not read RC – Record changed YES – Record found NO – Record not found ERR – Error, check error fields for explanation
@@ERR (10)	Short description of the cause of the problem (invalid, reclock, error, required, deleted, chgrec).
@@ERRS (10)	The subject causing the error. The value could be a parameter (KLST), an operation (OPEN), or a file name (Fxxxx). Used in combination with @ERR gives a good idea of what happened. The application program will generally only use @@IOR. @@ERR and @@ERRS are most useful for debugging purposes.
@@#RRN (9,0)	Returns the relative record number of the record just read (both input and output).

PARM (Length)	Description
I (filename)	Returns an exact duplicate of the record image (both input and output).

26.8 Implementing a File Server

To implement a file server

The following are generally the steps needed to set up a file server in a program. Some programs may differ.

1. Remove F-spec line for file being accessed through the server, and replace it with a comment mentioning access through the server.
2. Add clear statement in S999 (CLEAR PS@@1). You can optionally set @@FMT to the JD Edwards base release value ("A73" or "A81") so it does not have to be set on every call.
3. Copy in I-spec copy module I00XFSRV.
4. Copy in I-spec copy module for the required server, following the naming convention: I(file name) (release level). For example, I010171.
5. Code call to server for each database access. Naming convention for server is X(file name). For example, XF0101 for F0101 and any of its logicals.
 - Load control parameters
 - Load record image if a write or update
 - Call the server
 - Check the return code
6. Remove any open statements and key lists for this file from S999 in the calling program.
7. Remove any output specifications dealing with EXCPT unlock statements at the bottom of the program. The server will handle all of the unlock and lock operations.

Note: When reading sequentially (@@ACCS = S) through the physical file or through a DREAM Writer based-on file that is overridden to the physical, some operations are not available. Do not use: CHAIN, EXIST, READE, REDPE, UPDATC, SETLL, SETGT, SETHV, SETLV. Since UPDATC is not available and you are going to update a record, you need to read with lock.

If the file you are accessing through the server is the DREAM Writer based on file, the Open Query Options on the DREAM Writer Additional Parameters screen need to be changed. Change all of the "Open for xxxxx" parameters to "Y" on the DW Additional Parameters screen.

26.9 Searching for Key Lists

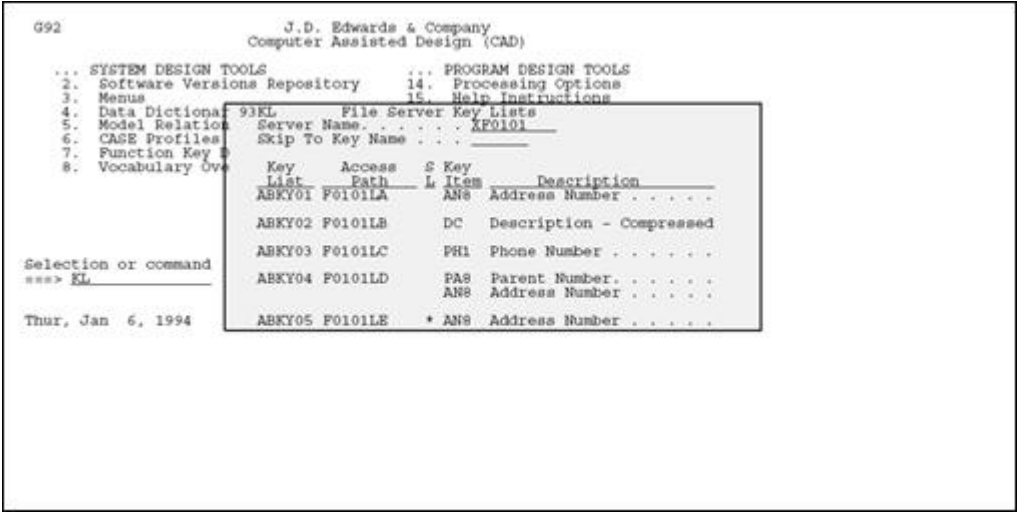
When converting programs to use the file servers, make note of what logical files are being accessed, and what mode (update or input) and what each of the defined key lists for those access paths represent. There are some servers with information in the

F93201 which is accessed by the following process. Otherwise, using the Where Used function on a file entry in SVR may show which "X" (server) programs access a particular file.

To search for Key Lists

- 1. Look up the corresponding server key list name using P93KL (fast path, KL).
- 2. Search for the format name for files that are accessed in the program.
- 3. Replace each instance of file access code with a call to the server with the correct parameters.

Figure 26–2 File Server Key List window



26.10 Tips when Using File Servers

The following tips can help when using file servers:

- When converting a program to use the file servers, always set the @@LOCK parameter to "N" when reading records through an access path that the program uses to open for input only.

The reason for this is that all access paths are open for update in the server. This can cause record lock problems when a program opens multiple paths into the same file. Correct use of the @@LOCK parameter solves these problems.

- Some programs may be doing a CHAIN or EXCPT to unlock a record. Instead of replacing it with a CHAIN through the server, take advantage of the UNLCK operation. Performing an UNLCK on a file that does not have a record locked does not produce an error.
- Some programs perform a SETLL to validate that a record exists. The new operation EXIST is provided to handle this function. It returns a YES or NO in return code (@@IOR).
- There is only one instance in which a particular file server is active in your job, so if one program calls another program that accesses the file through the same access path, they are actually sharing the same open data path. If it is possible that a call to another program could relocate a file pointer that could error out the program, it would be a good idea to save the keys and reset the pointer (CHAIN or SETLL) upon returning.

26.10.1 File Server Examples

Figure 26-3 File Server Example (part 1)

Seq No.	U	C*	Mod DC*
1.00		C*	09.11.92
2.00		C*	10.11.92
3.00		C*Index of Examples:	10.11.92
4.00		C*	10.11.92
5.00		C*	10.11.92
6.00		C*	10.11.92
7.00		C*	10.11.92
8.00		C*	10.11.92
9.00		C*	10.11.92
10.00		C*	10.11.92
11.00		C*	10.11.92
12.00		C*	10.11.92
13.00		C*	10.11.92
14.00		C*	10.11.92
15.00		C*	10.11.92
16.00		C*	10.11.92
17.00		C*	10.11.92
18.00		C*	10.11.92
19.00		C*	10.11.92
20.00		C*	10.11.92
21.00		C*	10.11.92
22.00		C*	10.11.92
23.00		C*	10.11.92
24.00		C*	10.11.92
25.00		C*	10.11.92
26.00		C*1.1 File Server Calls:	10.11.92
27.00		C*	09.11.92
28.00		C*	09.11.92
29.00		C*	09.11.92
30.00		C*	09.11.92
31.00		C*	09.11.92
32.00		C*	10.11.92
33.00		C*	10.11.92
34.00		C*	09.11.92
35.00		C*	09.11.92
36.00		C*	10.11.92
37.00		C*	10.11.92
38.00		C*	10.11.92
39.00		C*	10.11.92
40.00		C*	10.11.92
41.00		C*	10.11.92
42.00		C*	10.11.92
43.00		C*	10.11.92
44.00		C*	10.11.92
45.00		C*	09.11.92
46.00		C*	10.11.92
47.00		C*	10.11.92
48.00		C*	10.11.92
49.00		C*	10.11.92
50.00		C*	10.11.92
51.00		C*	10.11.92
52.00		C*	10.11.92
53.00		C*	10.11.92
54.00		C*	10.11.92
55.00		C*	10.11.92
56.00		C*	10.11.92
57.00		C*	10.11.92
58.00		C*	10.11.92
59.00		C*	10.11.92
60.00		C*	10.11.92
61.00		C*	10.11.92
62.00		C*	10.11.92
63.00		C*	10.11.92
64.00		C*	10.11.92
65.00		C*	10.11.92
66.00		C*	10.11.92
67.00		C*	10.11.92
68.00		C*	10.11.92
69.00		C*	10.11.92
70.00		C*	10.11.92
71.00		C*	10.11.92
72.00		C*	10.11.92
73.00		C*	10.11.92
74.00		C*	10.11.92
75.00		C*	10.11.92
76.00		C*	10.11.92
77.00		C*	10.11.92
78.00		C*	10.11.92
79.00		C*	10.11.92

Figure 26-4 File Server Example (part 2)

80.00	CSE		CALL 'XF0101'			1-00:1-1--2-
81.00	C*					
82.00	CSE		PARM	PG001		10.11.92
83.00	CSE		PARM	I0101		10.11.92
84.00	CSE		SEIOR	COMP 'EL'	99	10.11.92
85.00	C*					10.11.92
86.00	C*	Old Code:				10.11.92
87.00	CSE	ASCTO2	DELETI0101R		8199	10.11.92
88.00	C*					10.11.92
89.00	C*	New Code:				10.11.92
90.00	CSE		MOVEL 'A61'	00PWT		10.11.92
91.00	CSE		MOVEL 'ASCTO2'	00CLGT		10.11.92
92.00	CSE		MOVEL 'DELET'	00OPFR		10.11.92
93.00	CSE		E-ADD3	00N3RM		10.11.92
94.00	CSE		CALL 'XF0101'			10.11.92
95.00	C*					10.11.92
96.00	CSE		PARM	PG001		10.11.92
97.00	CSE		PARM	I0101		10.11.92
98.00	CSE		SEIOR	COMP 'EL'	99	10.11.92
99.00	CSE		SEIOR	COMP 'NF'	52	10.11.92
100.00	C*					10.11.92
101.00	C*					10.11.92
102.00	C*	1.1.4 Existence Test:				10.11.92
103.00	C*					09.11.92
104.00	C*	Old Code:				09.11.92
105.00	CSE	ASCTO2	SETLLI0101D		9952	10.11.92
106.00	C*					09.11.92
107.00	C*	New Code:				09.11.92
108.00	CSE		MOVEL 'A61'	00PWT		10.11.92
109.00	CSE		MOVEL 'RPSY01'	00CLGT		10.11.92
110.00	CSE		MOVEL 'EXIST'	00OPFR		10.11.92
111.00	CSE		E-ADD3	00N3RM		09.11.92
112.00	CSE		CALL 'XF0101'			10.11.92
113.00	C*					09.11.92
114.00	CSE		PARM	PG001		09.11.92
115.00	CSE		PARM	I0101		10.11.92
116.00	CSE		SEIOR	COMP 'YES'	52	10.11.92
117.00	CSE		SEIOR	COMP 'ERR'	99	11.12.92
118.00	C*					09.11.92
119.00	C*					10.11.92
120.00	C*	1.1.5 Open:				10.11.92
121.00	C*					10.11.92
122.00	C*	Old Code:				10.11.92
123.00	CSE		OPEN F0006			10.11.92
124.00	C*					10.11.92
125.00	C*	New Code:				10.11.92
126.00	CSE		MOVEL 'A61'	00PWT		10.11.92
127.00	CSE		MOVEL 'MCKY01'	00CLGT		10.11.92
128.00	CSE		MOVEL 'OPEN'	00OPFR		10.11.92
129.00	CSE		CALL 'TF0006'			10.11.92
130.00	C*					10.11.92
131.00	CSE		PARM	PG001		10.11.92
132.00	CSE		PARM	I0006		10.11.92
133.00	C*					10.11.92
134.00	C*					10.11.92
135.00	C*	1.1.6 Read:				10.11.92
136.00	C*					10.11.92
137.00	C*	Old Code:				10.11.92
138.00	CSE		READ I0901A		9952	10.11.92
139.00	C*					10.11.92
140.00	C*	New Code:				10.11.92
141.00	CSE		MOVEL 'A61'	00PWT		10.11.92
142.00	CSE		MOVEL 'GMY01'	00CLGT		10.11.92
143.00	CSE		MOVEL 'READ'	00OPFR		10.11.92
144.00	CSE		MOVE 'N'	00LOCK		05.12.92
145.00	CSE		CALL 'XF0901'			10.11.92
146.00	C*					10.11.92
147.00	CSE		PARM	PG001		10.11.92
148.00	CSE		PARM	I0901		10.11.92
149.00	CSE		SEIOR	COMP 'ROP'	52	10.11.92
150.00	CSE		SEIOR	COMP 'EL'	99	10.11.92
151.00	C*					10.11.92
152.00	C*					10.11.92
153.00	C*	1.1.7 Read Equal:				17.11.92
154.00	C*					10.11.92
155.00	C*	Old Code:				10.11.92
156.00	CSE	ASCTO2	READR0101C		9957	10.11.92
157.00	C*					10.11.92
158.00	C*	New Code:				10.11.92
159.00	CSE		MOVEL 'A61'	00PWT		10.11.92
160.00	CSE		MOVEL 'ASCTO2'	00CLGT		10.11.92
161.00	CSE		MOVEL 'READR'	00OPFR		10.11.92
162.00	CSE		MOVE 'N'	00LOCK		05.12.92

Figure 26-5 File Server Example (part 3)

163.00	CSE		CALL 'XPOS01'		10.11.92	
164.00	C*		-----		10.11.92	
165.00	CSE		RAVN	POWER1	10.11.92	
166.00	CSE		RAVN	IO101	10.11.92	
167.00	CSE	SEICR	COMP 'NR'	87	10.11.92	
168.00	CSE	SEICR	COMP 'RL'	99	10.11.92	
169.00	C*		-----		10.11.92	
170.00	C*	1.1.8	Read Previous:		17.11.92	
171.00	C*				17.11.92	
172.00	C*				17.11.92	
173.00	C*	Old Code:			17.11.92	
174.00	CSE		READP10901B	9982	17.11.92	
175.00	C*				17.11.92	
176.00	C*	New Code:			17.11.92	
177.00	CSE		MOVEL 'A61'	SEFMT	17.11.92	
178.00	CSE		MOVEL 'GKEY02'	SEFLET	17.11.92	
179.00	CSE		MOVEL 'READP'	SEOPER	17.11.92	
180.00	CSE		MOVE 'H'	SELOCK	05.12.92	
181.00	CSE		CALL 'XPOS01'		17.11.92	
182.00	C*		-----		17.11.92	
183.00	CSE		RAVN	POWER1	17.11.92	
184.00	CSE		RAVN	IO901	17.11.92	
185.00	CSE	SEICR	COMP 'BOP'	82	17.11.92	
186.00	CSE	SEICR	COMP 'RL'	99	17.11.92	
187.00	C*		-----		17.11.92	
188.00	C*	1.1.9	Read Previous Equal:		10.11.92	
189.00	C*				10.11.92	
190.00	C*				10.11.92	
191.00	C*	Old Code:			10.11.92	
192.00	CSE		ARMY04	READP10101C	9987	10.11.92
193.00	C*				10.11.92	
194.00	C*	New Code:			10.11.92	
195.00	CSE		MOVEL 'A61'	SEFMT	10.11.92	
196.00	CSE		MOVEL 'ARMY02'	SEFLET	10.11.92	
197.00	CSE		MOVEL 'READP'	SEOPER	10.11.92	
198.00	CSE		MOVE 'H'	SELOCK	05.12.92	
199.00	CSE		CALL 'XPOS01'		10.11.92	
200.00	C*		-----		10.11.92	
201.00	CSE		RAVN	POWER1	10.11.92	
202.00	CSE		RAVN	IO101	10.11.92	
203.00	CSE	SEICR	COMP 'NR'	87	10.11.92	
204.00	CSE	SEICR	COMP 'RL'	99	10.11.92	
205.00	C*		-----		10.11.92	
206.00	C*	1.1.10	Set Greater Than:		10.11.92	
207.00	C*				10.11.92	
208.00	C*				10.11.92	
209.00	C*	Old Code:			10.11.92	
210.00	CSE		GKEY	SETGT10902A	5498	10.11.92
211.00	C*				10.11.92	
212.00	C*	New Code:			10.11.92	
213.00	CSE		MOVEL 'A61'	SEFMT	10.11.92	
214.00	CSE		MOVEL 'GKEY01'	SEFLET	10.11.92	
215.00	CSE		MOVEL 'SETGT'	SEOPER	10.11.92	
216.00	CSE		2-ADD3	SEKNUM	10.11.92	
217.00	CSE		CALL 'XPOS02'		10.11.92	
218.00	C*		-----		10.11.92	
219.00	CSE		RAVN	POWER1	10.11.92	
220.00	CSE		RAVN	IO902	10.11.92	
221.00	CSE	SEICR	COMP 'NR'	54	10.11.92	
222.00	CSE	SEICR	COMP 'ERR'	98	10.11.92	
223.00	C*		-----		10.11.92	
224.00	C*	Old Code:			10.11.92	
225.00	CSE		'HIVAL	SETGT10902A	99	10.11.92
226.00	C*				10.11.92	
227.00	C*	New Code:			10.11.92	
228.00	CSE		MOVEL 'A61'	SEFMT	10.11.92	
229.00	CSE		MOVEL 'GKEY01'	SEFLET	10.11.92	
230.00	CSE		MOVEL 'SETTR'	SEOPER	10.11.92	
231.00	CSE		CALL 'XPOS02'		10.11.92	
232.00	C*		-----		10.11.92	
233.00	CSE		RAVN	POWER1	10.11.92	
234.00	CSE		RAVN	IO902	10.11.92	
235.00	CSE	SEICR	COMP 'ERR'	99	10.11.92	
236.00	C*		-----		10.11.92	
237.00	C*	1.1.11	Set Lower Limit:		10.11.92	
238.00	C*				10.11.92	
239.00	C*				10.11.92	
240.00	C*	Old Code:			10.11.92	
241.00	CSE		ARM01	SETLL10101C	849985	10.11.92
242.00	C*				10.11.92	
243.00	C*	New Code:			10.11.92	
244.00	CSE		MOVEL 'A61'	SEFMT	10.11.92	
245.00	CSE		MOVEL 'ARMY02'	SEFLET	10.11.92	

Figure 26-6 File Server Example (part 4)

246.00	CER		MOVIL'GETILL'	SECFER		10.11.92
247.00	CER		Z-ADDL	SECHUM		10.11.92
248.00	CER		CALL 'XFO101'			10.11.92
249.00	C*		-----			10.11.92
250.00	CER		PARM	DSBML		10.11.92
251.00	CER		PARM	IO101		10.11.92
252.00	CER	SSICR	COMP 'EOF'		84	10.11.92
253.00	CER	SSICR	COMP 'EQ'		85	10.11.92
254.00	CER	SSICR	COMP 'ERR'		99	10.11.92
255.00	C*		-----			10.11.92
256.00	C*	Old Code:				10.11.92
257.00	CER	*LOCAL	SETILLIO101C		99	10.11.92
258.00	C*					10.11.92
259.00	C*	New Code:				10.11.92
260.00	CER		MOVIL'AS1'	SECPMT		10.11.92
261.00	CER		MOVIL'AREY03'	SECLST		10.11.92
262.00	CER		MOVIL'GETLV'	SECFER		10.11.92
263.00	CER		CALL 'XFO101'			10.11.92
264.00	C*		-----			10.11.92
265.00	CER		PARM	DSBML		10.11.92
266.00	CER		PARM	IO101		10.11.92
267.00	CER	SSICR	COMP 'ERR'		99	10.11.92
268.00	C*		-----			10.11.92
269.00	C*	1.1.12 Update:				10.11.92
270.00	C*					10.11.92
271.00	C*					10.11.92
272.00	C*	Old Code:				10.11.92
273.00	CER		UPDATIO902A		99	10.11.92
274.00	C*					10.11.92
275.00	C*	New Code:				10.11.92
276.00	CER		MOVIL'AS1'	SECPMT		10.11.92
277.00	CER		MOVIL'BBKY01'	SECLST		10.11.92
278.00	CER		MOVIL'UPDAT'	SECFER		10.11.92
279.00	CER		CALL 'XFO902'			10.11.92
280.00	C*		-----			10.11.92
281.00	CER		PARM	DSBML		10.11.92
282.00	CER		PARM	IO902		10.11.92
283.00	CER	SSICR	COMP 'ERR'		99	10.11.92
284.00	C*		-----			10.11.92
285.00	C*	Old Code:				10.11.92
286.00	C*		Read...			10.11.92
287.00	C*		Unlock...			10.11.92
288.00	C*		Chain...		82	10.11.92
289.00	C*					10.11.92
290.00	CER		UPDATIO902A		99	10.11.92
291.00	C*					10.11.92
292.00	C*	New Code:				10.11.92
293.00	C*		Read with no lock...			10.11.92
294.00	C*					10.11.92
295.00	CER		MOVIL'AS1'	SECPMT		10.11.92
296.00	CER		MOVIL'BBKY01'	SECLST		10.11.92
297.00	CER		MOVIL'UPDTC'	SECFER		10.11.92
298.00	CER		Z-ADDL	SECHUM		10.11.92
299.00	CER		CALL 'XFO902'			10.11.92
300.00	C*		-----			10.11.92
301.00	CER		PARM	DSBML		10.11.92
302.00	CER		PARM	IO902		10.11.92
303.00	CER	SSICR	COMP 'HF'		82	10.11.92
304.00	CER	SSICR	COMP 'ERR'		99	10.11.92
305.00	C*		-----			10.11.92
306.00	C*	1.1.13 Write:				09.11.92
307.00	C*					10.11.92
308.00	C*					09.11.92
309.00	C*	Old Code:				09.11.92
310.00	CER		WRITEIO101K		99	10.11.92
311.00	C*					09.11.92
312.00	C*	New Code:				09.11.92
313.00	CER		MOVIL'AS1'	SECPMT		10.11.92
314.00	CER		MOVIL'BBKY11'	SECLST		10.11.92
315.00	CER		MOVIL'WRITE'	SECFER		10.11.92
316.00	CER		CALL 'XFO101'			10.11.92
317.00	C*		-----			09.11.92
318.00	CER		PARM	DSBML		09.11.92
319.00	CER		PARM	IO101		10.11.92
320.00	CER	SSICR	COMP 'ERR'		99	10.11.92
321.00	C*		-----			09.11.92
322.00	C*	1.1.14 Unlock:				09.11.92
323.00	C*					10.11.92
324.00	C*	Old Code:				09.11.92
325.00	CER		EXCEPTUNLOCK			09.11.92
326.00	C*					10.11.92
328.00	OIO101A	E	UNLOCK			10.11.92

Figure 26–7 File Server Example (part 5)

229.00	C*				09.11.92
230.00	C*	New Code:			09.11.92
231.00	CSE		MODEL 'A61'	388PMT	10.11.92
232.00	CSE		MODEL 'ASKY01'	388CLST	10.11.92
233.00	CSE		MODEL 'UNLCK'	388OPRR	10.11.92
234.00	CSE		CALL 'XF0101'		09.11.92
235.00	C*		-----		09.11.92
236.00	CSE		PARAM	PARAM1	09.11.92
237.00	CSE		PARAM	I0101	10.11.92
238.00	CSE	SECTION	COMP 'ERR'	99	10.11.92
239.00	C*		-----		09.11.92
240.00	C*				10.11.92
241.00	C*	2.1.1	X0901:		10.01.92
242.00	C*				10.01.92
243.00	CSE		CALL 'X0901'		10.01.92
244.00	C*				10.01.92
245.00	CSE		PARAM '2'	HSCALE 1	10.01.92
246.00	CSE		PARAM	HCO 5	10.01.92
247.00	CSE		PARAM	HCG 60	10.01.92
248.00	CSE		PARAM	HFN 20	10.01.92
249.00	CSE		PARAM	HFY 20	10.01.92
250.00	CSE		PARAM	HCTY 20	10.01.92
251.00	CSE		PARAM	HEDT 1	10.01.92
252.00	CSE		PARAM '1'	HDEGY 1	10.01.92
253.00	C*				10.01.92
254.00	C*				10.01.92
255.00	C*				10.01.92
256.00	C*	2.2.1	X0901:		10.01.92
257.00	C*				10.01.92
258.00	CSE		CALL 'X0901'		10.01.92
259.00	C*		-----		10.01.92
260.00	CSE		PARAM '1'	PARAM 1	10.01.92
261.00	CSE		PARAM EPAM	PARAMOD 1	10.01.92
262.00	CSE		PARAM '1'	PARAMOD 1	10.01.92
263.00	CSE		PARAM EPGLER	PARAMI 29	10.01.92
264.00	CSE		PARAM *ELARE	PARAMU 12	10.01.92
265.00	CSE		PARAM *ELARE	PARAMJ 6	10.01.92
266.00	CSE		PARAM *ELARE	PARAM 6	10.01.92
267.00	CSE		PARAM	PARAM 4	10.01.92
268.00	C*				10.01.92
269.00	C*				10.01.92
270.00	C*				10.01.92
271.00	C*	2.3.1	X0006:		10.01.92
272.00	C*				10.01.92
273.00	CSE		CALL 'X0006'		10.01.92
274.00	C*		-----		10.01.92
275.00	CSE		PARAM 'I'	PARAMOD 1	10.01.92
276.00	CSE		PARAM	PARAMOD 1	10.01.92
277.00	CSE		PARAM SPNCU	PARAMU 12	10.01.92
278.00	CSE		PARAM	PARAM 4	10.01.92
279.00	CSE		PARAM	I0006	10.01.92
280.00	C*				10.01.92
281.00	C*				10.01.92

26.11 Commonly Used File Servers

The following is a list of commonly used file servers:

File Server	Description	Notes
X0005	User Defined Codes Server	Retrieve Only
X0006	Retrieve Cost Center Master	Retrieve & Scrub
XF0006	Cost Center I/O	Add/Change/Delete
X0010	Automatic Next Numbering	Retrieve & Increment
X9203	DD Alpha Description	Retrieve Only
X9800E	Data Dictionary Info	Editing Info
XF0101	Address Book I/O	Add/Change/Delete
XS0101LA	Address Book	Retrieve Only
X0901	Account Master	Retrieve & Formats
XF0901	Account Master I/O	Add/Change/Delete
X41LOCN	Location Format	
X41LOT	Lot Number Assignment	
X41DUP	Lot Master Duplicate	Edits
X4101	Item Master	Retrieve & Edit

File Server	Description	Notes
X4108	Lot Master Update	Creates & Updates
X4111	Write to Item Ledger	Writes Only
XF4111	CARDEX I/O	Retrieve Only
XF42119	Sales History I/O	Add/Change/Delete
XF42199	Sales Detail Ledger I/O	Add/Change/Delete
XF43199	Purchasing History I/O	Add/Change/Delete

Functional Servers

This chapter contains these topics:

- [Section 27.1, "About Functional Servers"](#)
- [Section 27.2, "What Are Functional Servers?"](#)
- [Section 27.3, "What Are the Advantages of Using a Functional Server?"](#)
- [Section 27.4, "What Are the Disadvantages of Using a Functional Server?"](#)
- [Section 27.5, "Setting Up Business Rules for an Entry Program"](#)
- [Section 27.6, "How Does a Functional Server Function?"](#)
- [Section 27.8, "The Call Parameters for the Functional Server"](#)
- [Section 27.9, "Control Fields within the User Space"](#)
- [Section 27.10, "Error Message Index Line \(C00RIX\)"](#)
- [Section 27.11, "Example - Functional Server Program Sections"](#)
- [Section 27.12, "Available Functional Servers"](#)

27.1 About Functional Servers

A functional server allows you to enhance the processing and maintenance of your application programs. Functional servers provide a central location for standard business rules about entering documents, such as vouchers, invoices, and journal entries. These business rules establish the following:

- Data Dictionary default values
- Field edits and valid values
- Error processing
- Relationships between fields or applications

27.2 What Are Functional Servers?

A functional server is a program that performs all transaction validation and database updates.

The functional server removes from the application program the burden of performing edit and update operations. Rather, this functionality is placed within the server.

A functional server is a called program. The application program calling the server must tell the server what action to perform for every transaction. In turn, the

functional server will record error flags and update flags and return error messages to the application program for use when determining the result of a call to a server.

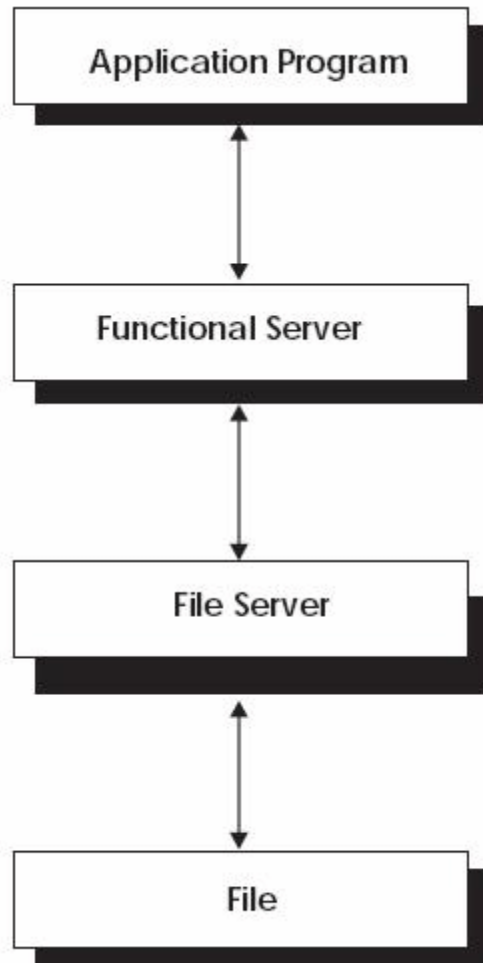
Functional servers have the following naming convention:

XT (file name) (server version)

For example: The functional server for file F0411 would appear as XT0411Z1.

The following diagram depicts the flow of a typical program using a functional server:

Figure 27-1 Program Flow Using a Functional Server



27.3 What Are the Advantages of Using a Functional Server?

Advantages of using a functional server include:

- Minimized maintenance and versioning of your software.
- Ability to isolate data editing routines and file updates.
- Increased flexibility because multiple programs can use the same functional server.
- Smoother transition from an old database to a new database. Instead of modifying all programs, you will only have to apply a new set of functional servers.

- Ability to implement one functional server at a time without affecting your entire system.

27.4 What Are the Disadvantages of Using a Functional Server?

Disadvantages of functional servers include:

- A functional server is minutely slower because you are performing an external call to the server from your program.
- Functional server programs tend to be large.

27.5 Setting Up Business Rules for an Entry Program

To set up business rules for an entry program

You can have all your entry programs use the same DREAM Writer version (and thus, use the same rules) or you can set up different DREAM Writer versions. JD Edwards World provides DREAM Writer version ZJDE0001 as the default functional server version for your entry programs.

1. Create a DREAM Writer version for a specific functional server program (for example, XT0411Z1 for voucher entry).
2. Set the processing options within the version according to your company requirements.
3. Specify the version you want the entry program to use in the processing options for that entry program.

Caution: Only the person responsible for system-wide setup should make changes to the functional server version. For more information about how to set up DREAM Writer versions, see the *JD Edwards World Technical Foundation Guide*.

27.6 How Does a Functional Server Function?

When a functional server is called, an entire transaction is processed.

- Generally, once a functional server is called, it receives the data that the user entered and loads it into a user space.
- It performs its functionality on the data.
- Finally, it returns the requested data back to the calling program using the user space. If any errors occur, the system loads them into a user index.

The system uses the following interfaces to communicate with the functional server:

- The call parameters
- The control fields within each user space line
- The error index

27.7 Functional Server Highlights

Functional servers are usefully for many things, highlights include:

- Provides all editing for a transaction

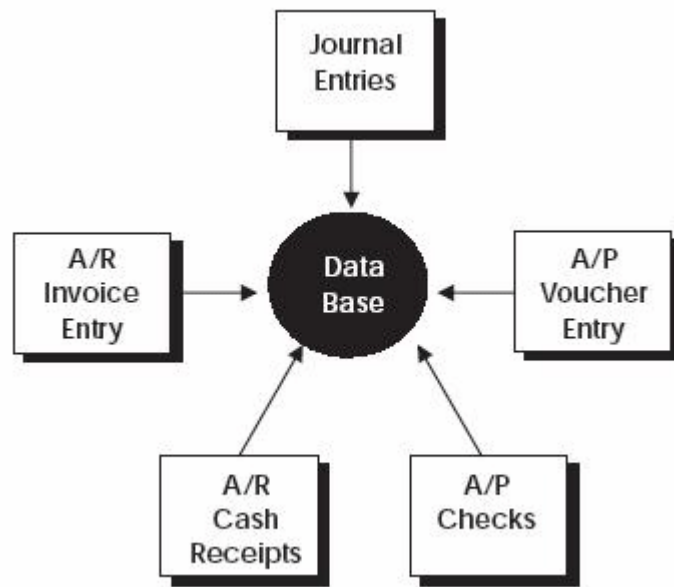
- Provides field default values
- Provides all database updates
- Performs inquiry for an entire transaction
- Runs interactively or in batch
- Supports a multitude of user interfaces

27.7.1 Basic Accounting Transactions

In the Financial System there are five basic transactions:

- Journal Entries
- A/P Voucher Entry
- A/P Checks
- A/R Invoice Entry
- A/R Cash Receipts

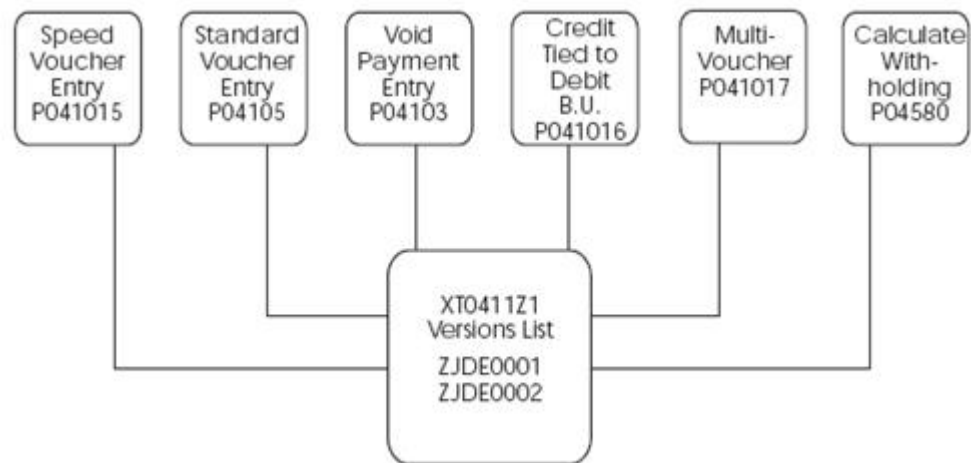
Figure 27-2 Basic Accounting Transactions



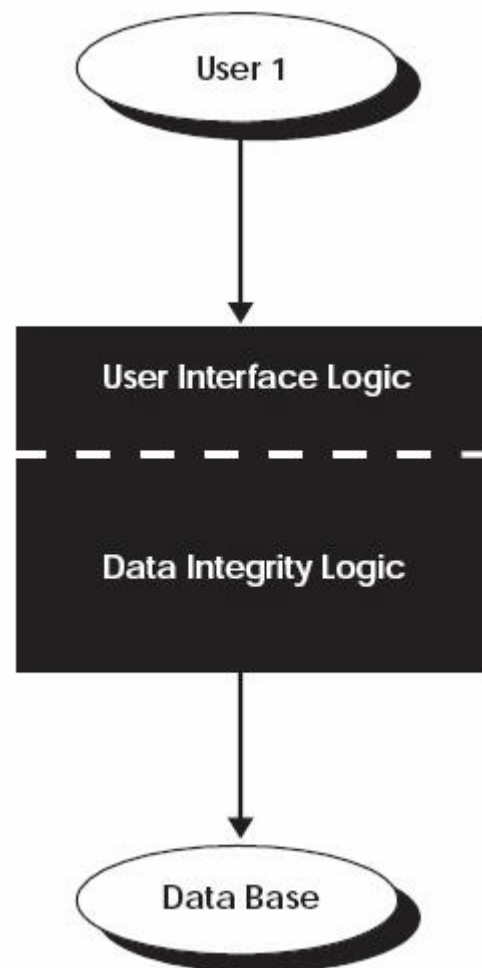
JD Edwards World uses one program for each part or transaction of the system.

27.7.2 Example: Voucher Processing Functional Server

The following graphic shows the programs that use the voucher processing functional server. JD Edwards World provides two demo versions of the functional server, ZJDE0001 and ZJDE0002.

Figure 27-3 Programs That Use the Voucher Processing Functional Server

27.7.3 Program Example - Traditional Architecture

Figure 27-4 Program Example - Traditional Architecture

Each program contains both the User Interface Logic and the Data Integrity Logic. You would access this one program to interface with the database.

27.7.4 User Interface Logic

Aspects of the user interface logic include:

- Screen format
- Field formatting
- Help functions
- Error message display
- Touch and feel

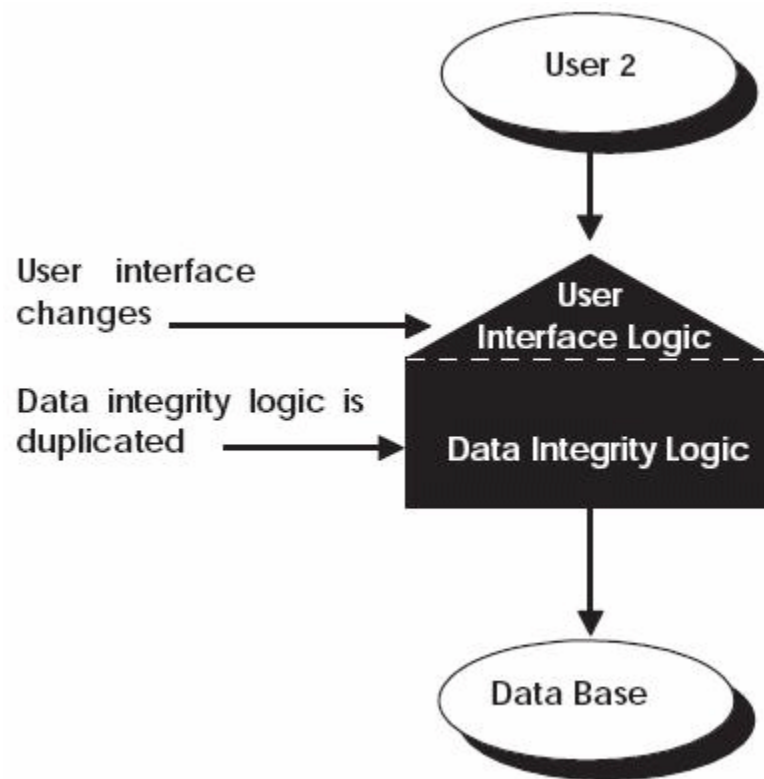
27.7.5 Data Integrity Logic

Aspects of the data integrity logic include:

- Field editing
- Multi-field editing
- Transaction editing
- Default logic
- Error message selection
- Tax processing
- Currency processing
- Database update

27.7.6 Example - Traditional Architecture - Alternative Method of Entry

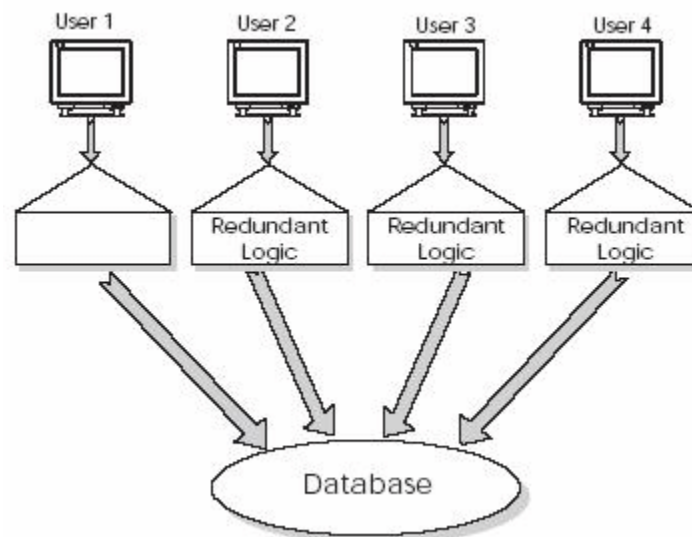
Figure 27-5 Traditional Architecture - Alternative Method of Entry



If a user wanted the screen to look different, the User Interface Logic would have to change. The Data Integrity Logic would be duplicated.

27.7.7 Example - Traditional Architecture - Various Entry Methods

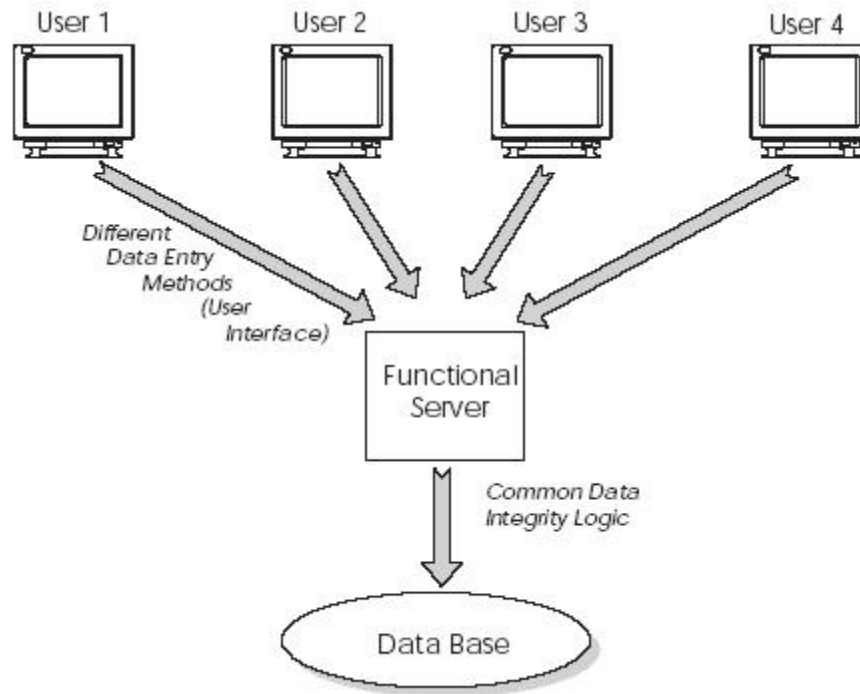
Figure 27-6 Traditional Architecture - Various Entry Methods



Several users each wanted their own User Integrity logic. The Data Integrity Logic remained the same and was duplicated numerous times.

27.7.8 Example - JD Edwards World Open Application Architecture - Various Entry Methods

Figure 27-7 Open Application Architecture Concept

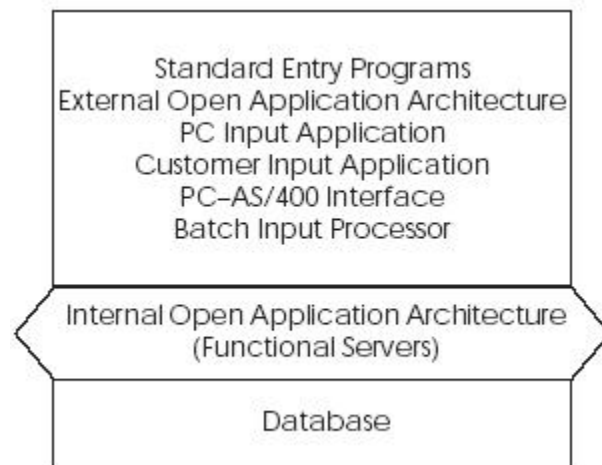


The creation of a Functional Server allows you to maintain the Data Integrity Logic in one common program. The Functional Server becomes separated from each User Integrity Logic program. All of the User Integrity Logic programs access one Functional Server to interface with the database. This concept is called an Open Application Architecture.

27.7.9 Open Application Architecture

In the Open Application Architecture, the database is separated from each User Integrity Logic program by the Functional Server. Advantages of the Open Application Architecture include:

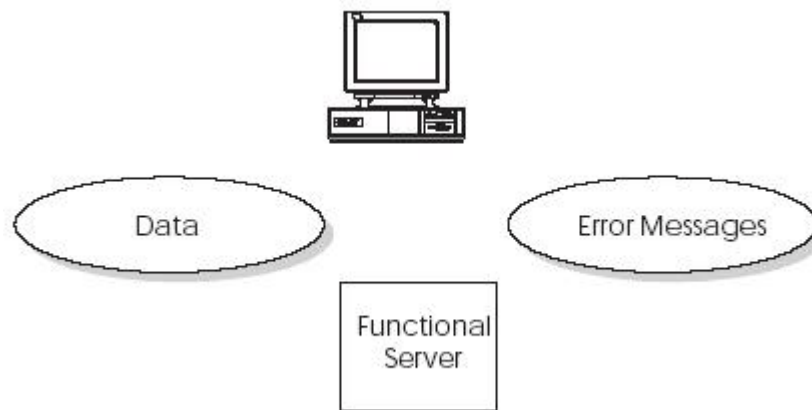
- Automatic consistency
- Reduced maintenance burden
- Stability of custom code
- Separation of development efforts
- Performance enhancements

Figure 27-8 Open Application Architecture

27.7.10 Functional Server Interface

A functional server must handle two basic components:

- Data
- Error messages

Figure 27-9 Functional Server Components

27.7.11 Functional Server Transaction Data

Arithmetic:

1. Full transaction passed to server at one time.
2. A single transaction can have more than 1,000 lines.
3. Each line from 500 to 1,000 characters long.

= A lot of space

Story Problem:

How can program A pass program B a one-thousand line transaction without using a 1-meg parameter?

27.7.12 Functional Server Error Messages

Arithmetic:

1. Each field can have an error.
2. Each line can have 150 or more fields.
3. Each transaction can have hundreds of lines.

= A lot of space

Story Problem:

How can program A pass program B a one-thousand line transaction without using a 1-meg parameter?

27.7.13 Answers

#1. User Space

#2. User Index

27.7.14 Functional Server Interface

A Functional Server can interact with a User Space and a User Index by passing and receiving parameters.

27.7.15 Functional Server Parameters

Single data structure defined in /COPY module.

Parameters that are fixed and application specific.

- Fixed parameters
 - Action code (edit, update, inquire)
 - Number of lines in transactions
 - DREAM Writer version of Functional Server
- Application specific parameters
 - Contains header information for a transaction
 - Document number of transaction
 - Total amount of transaction
 - Batch number of transaction

27.7.16 Functional Server User Space

Single data structure defined in /COPY module.

- One big data area
- Maximum of 16 meg
- Beginning 100 bytes of user space reserved
- Data portion of user space contains formatted lines
 - User space lines defined by /COPY module
 - Each line contains three sections

- 1) Control section
- 2) Application specific section
- 3) Record format section

27.7.17 Functional Server User Index

Single data structure defined in /COPY module.

- One big keyed data area
- Used to pass error messages back to application
- User index entry defined using a /COPY module
- Each user index entry contains two sections
 - 1) Key
 - Application ID
 - Line number (assigned by application program)
 - Data item in error
 - Error code
 - 2) Data - value of erroneous data

27.7.18 Functional Server /COPY Modules

Repository for all user space and user index formats.

- All User Space and User Index formats contained in /COPY modules
- All database record formats contained in /COPY modules
- /COPY module I00FS@@ contains generic data structures and constants
- Each Functional Server has its own I00FSxx /COPY module to define application specific data structures

27.7.19 Creating User Space and User Index

When you create user space and user index formats, use the following tools:

- OS/400 APIs
- X00991
 - Called once for each Functional Server the application program intends to use
 - Creates user space and user index for each Functional Server
 - Returns name and library where user space exists
 - Returns the length each user space line should be

27.7.20 Accessing the User Space

- Writing to the user space X98CHGUS.
 - .JD Edwards World version of QUSCHGUS API
 - Updates a user space beginning at offset x for length
 - Similar to CHGDTAARA command

- Reading from the user space QUSRTVUS.
 - API
 - Retrieves data from a user space beginning at offset x for length
 - Similar to RTVDTAARA command
- Application responsibilities
 - Remember number of lines written to user space
 - Increment user space offset

27.7.21 Accessing the User Index

- User Index written to by Functional Server.
- Reading from the User Index.
 - C00RIX/COPY module reads the User Index
 - C00RIX returns formatted error message defined by /COPY module
 - First execution of C00RIX reads first entry in User Index
 - Subsequent executions of C00RIX do read nexts
 - Uses X00IDX under the covers
- Application responsibilities.
 - Remember the value of your Application ID (typically program name)
 - Set flag for initial read of User Index by C00RIX
 - Use the data item name and line number in error to set ON screen indicators

27.7.22 Interactive Program Cycle Using a Functional Server

- Mainline - no change
- S001 - no change
- S003
 - No change for add, change, or delete
 - Call Functional Server to perform an inquiry
- S004 - Retrieve records from User Space for display on screen
- S005
 - Application program performs "scrubs" only
 - Write data records to User Space
 - Call Functional Server to perform edits
 - Read each line from User Space to redisplay defaulted information
 - Execute C00RIX to determine each data item in error so that screen error indicators may be set ON
- S010 - call Functional Server to perform an update

27.8 The Call Parameters for the Functional Server

The call parameters provide commands to the functional server which applies to all transaction lines in the input user space.

The first parameter is a Data Structure. The following fields are from the #PPARM Data Structure defined in the I00FS@@ copy module.

PARM (Length)	Description
#PFUNC (1)	Specifies a function code. The valid values are: 0 – Edit and Update 1 – Edit only 2 – Update only I – Inquire
#PVERS (10) (3 before A6)	The DREAM Writer version number you are executing. This parameter uses the version number to retrieve processing options for the server. The default version number will be ZJDE0001. This allows global processing options to be set at the server level, instead of for each program.
#PSPCN (20)	The name of the user space which the program has used. The user space contains the modified database records. Characters 1-10 contain the space name, and characters 11-20 contain the library name.
#PSPCB (9,0)	The byte position within the user space where the application data begins. Characters in the space prior to this position contain header information used by the functional server.
#PNBRL (5,0)	The number of lines in the input user space which the application program has loaded. When inquiring, this contains the number of lines output to the user space.
#PWARN (1)	This parameter contains a code explaining how you want warnings to be handled. The valid values are: 0 – Normal warning processing 1 – Treat warnings as errors 2 – Ignore warnings
#PCYCL (1)	This parameter is only used if the #PWARN parameter specifies normal warning processing. The valid values are: 0 – No cycle, all cycle processing ignored 1 – First cycle, all warning messages are sent to the program 2 – Second cycle, only warning messages not previously sent are sent to the program
#PDFTC (1)	Specifies how you want field values to be defaulted. 0 will default field values for add lines only and 1 will default field values for change or add lines.
#PXATP (3)	The application specific transaction type.
#PLVL (1)	The transaction level. 0 implies that each detail record to be updated or added has been sent in the input user space. 1 applies only to changes or deletions because only one record is sent in the input user space and the server will change or delete all other records for that transaction.
#PPROG (10)	The name of the calling program. This is used by the server to update the program name field in the updated database records.

PARM (Length)	Description
#PAPPL (10)	The application ID value used for writing entries to the error index. Generally, this may be the same value as the calling program.
#PFLDS (4,0)	The number of fields which have been loaded to the Field Names Array parameter.
#PFMT (10)	The record format identifier the application program has used. This is used for versioning, allowing the database to change without the need for recompiling the application program.
#PEDIT (1)	Indicates the overall result of edits performed against all transaction lines. 0 implies that the edits went OK, 1 means there were some warnings, 2 is errors occurred.
#PUPDT (5,0)	The number of database updates which occurred. This will allow the program to know whether any updates actually occurred.
#PERR (4)	Specifies any errors that occurred within the server. A non-blank value indicates a fatal error occurred.
#PFERR (4)	Contains the first error message found during editing.
#PFDTA (4)	Contains the data item of the first field which had an error during editing.
#P#MDE (1)	For currency translations, this contains the mode of entry. If this value is passed as blank, the server will output the default mode of entry.
#PCRCD (3)	For currency translations, this contains the currency code of entry. If this value is passed as blank, the server will output the default currency code.
#PCRR (15,7)	For currency translations, this contains the currency exchange rate of entry. If this value is passed as zero, the server will output the default currency rate.
#PIDXN (20)	The name of the user index which the functional server will use to return error messages to the program. Characters 1-10 contain the index name, and characters 11-20 contain the library name.
#PSPCL (5,0)	The total length of each user space record. This includes both the user space control fields and the database record format.
#PSPEC (250)	This is a data structure which is redefined by each server. Generally, this will contain the application key fields which a specific server uses.

The second parameter will be an array.

PARM (Length)	Description
Variable Array	An array of field names which the program has used. Only fields in this array will be updated in the database. If the first element contains *ALL, then all fields will be used. The number of field names parameter should contain the number of entries loaded into this array.

27.9 Control Fields within the User Space

The input user space can contain multiple lines for each control field. The following fields are defined in the #SSPCR Data Structure in the I00FS@@ copy module.

PARM (Length)	Description
#SPCAC (1)	The line action code. The valid values are: A – Add the record D – Delete the record C – Change the record U – Change the record if it already exists, otherwise add the record V – Void the record
#SPCID (15,0)	Used by the program to uniquely identify each line in the user space. (optional)
#SPCER (1)	The line error code. X = the line is OK 1 = some warnings 2 = errors.
#SPCUP (1)	The line update code. 0 = the line was not updated 1 = updated
#SPCRR (9,0)	Contains the database relative record number which corresponds to this user space record. For adds, this is only loaded following an update operation. For changes and deletes, this is updated following an edit operation.
#SPCMN (2,0)	Contains the database physical file member number which corresponds to this user space record. For adds, this is only loaded following an update operation. For changes and deletes, this is updated following an edit operation.
#SPCPG (12)	Allows the program to store up to 12 bytes of information with each user space record.
#SPCAP (200)	Any application specific information which must be passed to the server for each transaction line, but is not contained within the transaction record format.
Application fields	Externally described record format for the transaction record.

27.10 Error Message Index Line (C00RIX)

The output error message index contains warning and error messages issued for each line in the user space. The following fields are from the #IIDXR Data Structure defined in the I00FS@@ copy module. The structure of the message index line is as follows:

Field (Length)	Explanation
#IDXAP (10)	The application identifier from the input parameter. Allows a program to access only its error messages.
#IDXID (15,0)	The line identifier from the input user space.
#IDXFN (10)	The data item portion of the field name.
#IDXER (4)	Contains the data dictionary error message code.
#IDXWN(1)	Line warning code 1 = Warning, 2 = Error.
#IDXMD (87)	Not used.

27.11 Example - Functional Server Program Sections

Figure 27-10 Functional Server Program Sections (part 1)

```
E*****
E*   Copy Composite Member for Functional Server
E*
E/COPY JDECPY,E00FS00
E*****
```

Copy module containing generic data structures for functional server.

Figure 27-11 Functional Server Program Sections (part 2)

```
I/COPY JDECPY,I00XPSRV
```

Contains control parameter list for file servers

Figure 27-12 Functional Server Program Sections (part 3)

```
I/COPY JDECPY,I010161
```

Contains record image of F0101 version A6.1 for file servers.

Figure 27-13 Functional Server Program Sections (part 4)

```
CLEARPS00
MOVE$SV00      KY00      01
CALL 'XS0010'
-----
PARM          PS00
PARM          DS0010
```

Call to file server XS0010 to retrieve company currency code.

Figure 27-14 Functional Server Program Sections (part 5)

```
*IN01      IF00 '0'
RT00      AND00 ' '
          MOVE *BLANKS      PS00
          MOVE$C000CD      KY00
          CALL 'XS0013'      01
          -----
          PARM DS0013      PS00
          PARM DS0013      PS0013
          IF00 'N'
          AND00 *BLANK
          MOVE CVCDEC      $CDO
          ENDIF
          ENDIF
```

Call to file server XS0013 to retrieve display decimals.

Figure 27-15 Functional Server Program Sections (part 6)

```
          MOVE$A61'      @@FMT
          MOVE$ABK01'    @@KLST
          MOVE$CHAIN'    @@OPER
          MOVE 'Y'      @@LOCK
          Z-ADD1      @@RNUM
          CALL 'XF0101'
          -----
          PARM          PS001
          PARM          I0101
          COMP 'NF'      01
          @@IOR
```

Call to file server XF0101 to retrieve record

Figure 27-16 Functional Server Program Sections (part 7)

```
*IN$1      IFBQ '0'
            ADD $#FC      ABAFCY
            MOVEL'A61'    @@FMT
            MOVEL'ABKY01'  @@NLST
            MOVEL'UPDAT'    @@OPER
            CALL 'XF0101'

            -----
            PARM          PG$#1
            PARM          I0101
            COMP 'ERR'

@@IOR
```

Call to file server XF0101 to update record

Figure 27-17 Functional Server Program Sections (part 8)

```
Load AR Specific Parameters

            MOVE #GLDCT    #ARDCT
            MOVE $SVKCO    #ARKCO
            Z-ADD#GLDOC    #ARDOC
            Z-ADD#GLICU    #ARICU
            MOVE #GLICT    #ARICT
            MOVE *BLANK    #ARSPL

Load functional server parms for edit/update.

            MOVEL#XIDCN    #PIDCN      index name
            MOVEL#SPAR     #PSPEC      applicatio
            MOVE #EDOP      #PFUNC      function
            MOVEL$#311     #PVERS      DW version
            Z-ADD1         #PNSRL      number of lines
            Z-ADD$#ARBG     #PSPCB      space offset
            MOVE #HIGNW     #PWARN      warning handler
            MOVE #HOPF      #PLVL      detail level
            MOVE #HOPF      #PDFTC      default on chg
            MOVE #HPRG      #PPROG      program name
            MOVE 'INV'      #PKATP      type
            MOVE #ARSN      #PGPCN      space name
            Z-ADD#ARSL      #PGPCL      space length
            Z-ADD$@AR       #PFLDS      number of field
            MOVE *BLANKS    #PFMT
            MOVE #HAR1      #PFMT      format name

            CALL 'XT0311Z1'          91
            -----
            PARM          #PPARM
            PARM          @ARN
```

Call functional server XT0311Z1

Figure 27-18 Functional Server Program Sections (part 9)

```

User space description
      MOVEL#GUGL      #SSPCD
Current user space offset
      Z-ADD#GLBG      #SPCOF
Set update flag
      MOVE ##OFF      #SPCUP
General Ledger record
      MOVEGL01        @SSPC
Application specific line data
      MOVEL#SSGL      #SPCAP
Write record to user space
      CALL 'X99CHGUS' #PCHUS      01
      *****
      ENDIP                      ##edit
    
```

Write records to user space
for functional server.

Figure 27–19 Functional Server Program Sections (part 10)

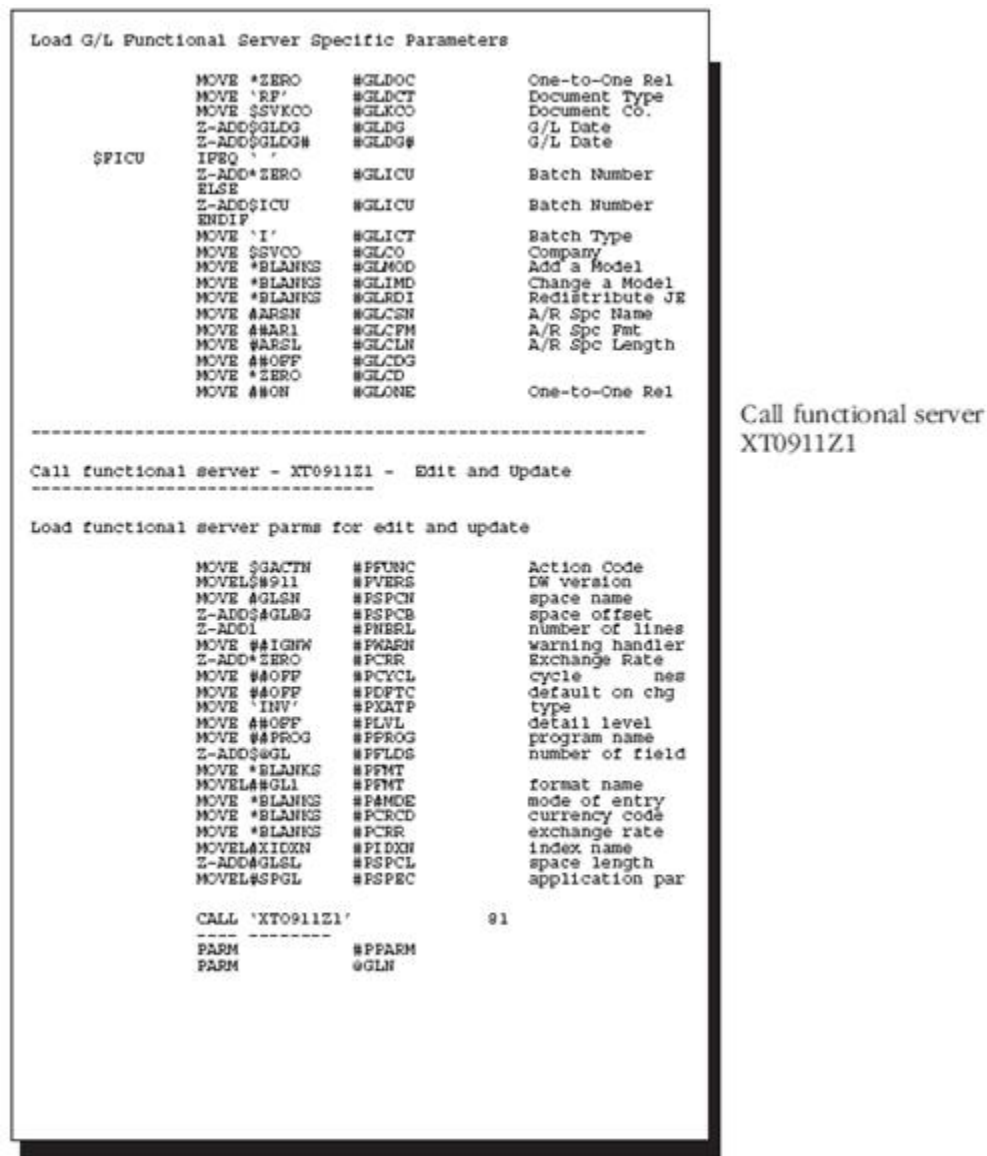


Figure 27–20 Functional Server Program Sections (part 11)

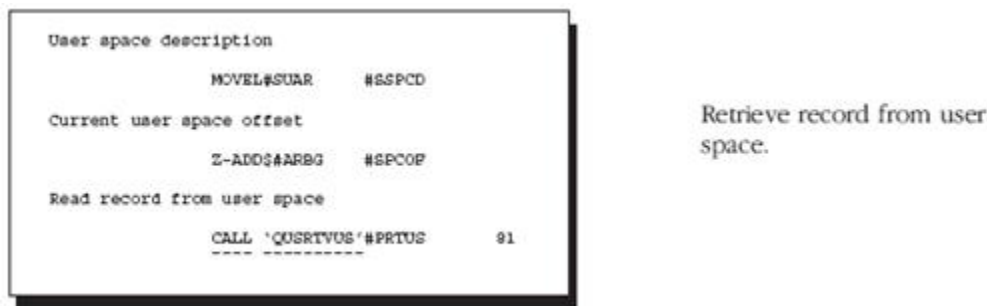


Figure 27-21 Functional Server Program Sections (part 12)

```

Create Functional Server Objects for XT0311Z1

      CLEAR#PCRT
      MOVE #BAD      #PCRTF
      MOVE #BLANK    #PCRTN
      MOVE#XT0311Z1'#PCRTN

      CALL 'X00991 '  ----- 91
      -
      PARM          #PCRT

```

Create user space and
user index for XT0311Z1.

Figure 27-22 Functional Server Program Sections (part 13)

```

Create Functional Server Objects for XT0911Z1

      CLEAR#PCRT
      MOVE #BAD      #PCRTF
      MOVE #BLANK    #PCRTN
      MOVE#XT0911Z1'#PCRTN

      CALL 'X00991 '  ----- 91
      -
      PARM          #PCRT

```

Create user space and
use index for
XT0911Z1.

27.12 Available Functional Servers

Functional Server	Description	Notes
XT0101Z1	Address Book	
XT0311Z1	Accounts Receivable	
XT0311Z1E	Accounts Receivable	User Exit
XT0411Z1	Accounts Payable	
XT0411Z1E	Accounts Payable	User Exit
XT06116Z1	Payroll Time Entry	
XT0901Z1	Account Master	
XT0911Z1	Journal Entry	
XT0911Z1E	Journal Entry	User Exit
XT4102Z1	Item Balance	

Source Debugger

This chapter contains these topics:

- [Section 28.1, "About Source Debugger"](#)
- [Section 28.2, "Using Debugger with an Interactive Program"](#)
- [Section 28.3, "Using Debugger with a Batch Program"](#)
- [Section 28.4, "Features of the JD Edwards World Source Debugger"](#)

28.1 About Source Debugger

There are two types of programs that can be executed under the JD Edwards World Source Debugger - interactive and batch. The only difference when running the Source Debugger on an interactive program compared to a batch program is the initial execution statements. Once the Source Debugger has begun, all of the features are the same for both interactive and batch programs.

The JD Edwards World Source Debugger is a tool designed to help you determine where an error exists in your program. You can apply the Source Debugger to any program, whether it is in production or development. Since the Source Debugger displays source code, you must have the source code installed on your machine.

The source code you see while running the Source Debugger is displayed in SEU Browse mode, so you cannot change a line within the program. However, you may display or change the value of any field, variable, or indicator within the program. In addition, you can add or remove a breakpoint anywhere in the program.

28.1.1 Before You Begin

- The JD Edwards debug tool is based on IBM debug objects. You must have authority to the IBM commands STRDBG, ADDPGM, ADDDBKP at a minimum. IBM has a STRISDB command which interacts with the program source. As of V5R1, the STRDBG command allows use of F10 to step through the program statements once the initial breakpoint is set.

Note: In order for the program to be debugged to be visible, it must have been compiled on the current machine.

28.2 Using Debugger with an Interactive Program

The program can exist in your production environment, your development environment, or both. To use Debugger complete the following tasks:

- Determine the program environment
- Initiate the JD Edwards World Source Debugger
- Execute the program being debugged

To determine the program environment

1. From the Computer Assisted Design menu (G92), select Software Versions Repository.

Figure 28–1 Software Versions Repository screen

```
9801                               Software Versions Repository
```

```
Action Code . . . I  
Member ID . . . F01051  
Description . . . Address Book Information  
Function Code . . RFG   RPG Programs  
Function Use . . . All   File Maintenance  
System Code . . . 01    Address Book  
Reporting System . 01    Address Book  
Base Member Name . F01051  
Maint/RSTDSP . . N     Omit Option . . . Generation Sev .  
Copy Data (Y/N) . N     Optional File . . Common File . . N
```

```
DREAM Writer Form Exists
```

O	Source	Object	Source	Version	S D	User	Date
P	Library	Library	File	ID	C P	ID	Modified
--	JDFSRCT7I	JDFORBT7I	JDESRC	678866 A7L	I --	DM904413	07/20/95
--					--		
--					--		
--					--		
--					--		
--					--		
--					--		
--					--		
--					--		

```
Opt: 1=Browse 2>Edit 3=Copy 5=SAR 8=Print 9=Dlt 10=Design 14=Crt F24=More
```

2. Locate the program on which you want to run the Source Debugger, to determine in what environments the program exists.

Note: If the program exists in several environments (production and development), you must determine against which program environment to run the Source Debugger. While in the debug environment, use WRKOBJ to see which library the program is attached to.

To initiate the JD Edwards World Source Debugger

1. Type the JD Edwards World debug command (JDEDBG) and press F4.

Figure 28–2 *Debugger screen*

```

Type choices, press Enter.

Program Name:      P01051_____ Name
Source File:      . . . . . JDESRC_____ Name, *OBJECT, *SPLF
Library:          . . . . . JDESRC_____ Name

F3=Exit    F4=Prompt    F5=Refresh    F10=Additional parameters    F12=Cancel
F13=How to use this display    F24=More keys

```

Field	Description
Program Name	Type your program name.
Source File	Type the file name that contains the source code of your program. If *OBJECT is entered, the source file name and library will be taken from the program object. If *SPLF is entered, the compile listing will be used for the source statements. This will include the statements included from COPY members which allows them to be debugged as well.
Library	Type the name of the library that contains the source file. Generally, this is JDFSRC for your production environment or DEVSRC for your development environment.

2. Enter the correct values in the proper fields and press Enter to start the Source Debugger.

- Any time the program being debugged is executed, the source code will display in debug mode, until you end the Source Debugger. (ENDDBG in all cases.)

To execute the program being debugged

If it is an interactive program, you can either call the program from a command line or select the menu option that will execute the program.

- Call program name and include the required parameters
- Selection/Menu

After you have executed the program, the first thing you will see is the program source code.

Figure 28–3 JDE Visual Debug screen

```

3701                               JDE Visual Debug          JDESRC      JDFSRC
Scan:                               P01051
Current Breakpoint: /0001
01.00      H/TITLE P01051  - Address Book - Who's Who
02.00      H*
03.00      H*
04.00      H*      Copyright (c) 1985,1986
05.00      H*      J. D. Edwards & Company
06.00      H*
07.00      H*      This unpublished material is proprietary to
08.00      H*      J. D. Edwards & Company. All rights reserved.
09.00      H*      The methods and techniques described herein are
10.00      H*      considered trade secrets and/or confidential.
11.00      H*      Reproduction or distribution, in whole or in part,
12.00      H*      is forbidden except by express written permission
13.00      H*      of J. D. Edwards & Company.
14.00      H*
15.00      H*
16.00      H*
17.00      F*
18.00      F*      PROGRAM REVISION LOG

F2=JDE Command Line  F5=ADDBKP  F6=ADDBKP w/prompt  F7=DSPPGMVAR
F8=CHGPGMVAR  F13=Display Indicators  F16/15=Scan Fwd/Bkwd  F24=More

```

Note: The source code is displayed in browse mode, so you cannot edit or change any code.

28.3 Using Debugger with a Batch Program

To use Debugger with a batch program you should complete the following tasks:

- Sign on to the program environment
- Initiate the JD Edwards World Source Debugger
- Execute the program
- Set the break point
- Continue execution

To initiate the JD Edwards World Source Debugger

This step is similar to debugging an interactive program. The difference is that you must enter the debug command twice.

The first time you initiate JD Edwards World Source Debugger (JDEDBG - F4), the Program Name will be the CL Program.

1. Enter the correct values in the proper fields on the Debug Program form and press Enter.

Figure 28–4 Debug Program screen

```

                                Debug Program (JDEDBG)

Type choices, press Enter.

Program Name: . . . . . J228400      Name
Source File: . . . . . JDESEC        Name, *OBJECT, *SPLF
Library: . . . . . JDFSEC           Name

F3=Exit   F4=Prompt  F5=Refresh  F10=Additional parameters  F12=Cancel
F13=How to use this display  F24=More keys
Bottom

```

2. Enter the JD Edwards World Source Debugger command (JDEDBG - F4) again, but this time change the Program Name to the RPG Program Name.

The reason for this is you cannot run the Source Debugger on a program that is submitted and executed in a subsystem. You must "trick" the Source Debugger into thinking that your batch program is actually an interactive program.

Figure 28–5 Debug Program screen

```

                                Debug Program (JDEDBG)

Type choices, press Enter.

Program Name: . . . . . P228400      Name
Source File: . . . . . JDESEC        Name, *OBJECT, *SPLF
Library: . . . . . JDFSEC           Name

F3=Exit   F4=Prompt  F5=Refresh  F10=Additional parameters  F12=Cancel
F13=How to use this display  F24=More keys
Bottom

```


To execute the program

Since you are executing a batch program interactively, you must call the CL Program from a command line.

1. CALL CL program (The parameters are usually "program name" and "version").
2. The CL Program source code displays.

Figure 28–6 JDE Visual Debug screen

```

93701          JDE Visual Debug          JDESRC          JDFSRC
Scan:          J928401
Current Breakpoint: /0001
0001.00 /******
0002.00 /*
0003.00 /* Program. . . . . J928401
0004.00 /*
0005.00 /* Description. . . . . Inventory by Cost Center
0006.00 /*
0007.00 /* Program Revision Log
0008.00 /*
0009.00 /*
0010.00 /*      Date      Programmer      Description
0011.00 /*      -----
0012.00 /*      11/10/93      PB908300      SAR # 00365595
0013.00 /*
0014.00 /******
0015.00 J928401: PGM      (&PSPID &PSVERS)
0016.00 /*
0017.00 /* ----- Define program file(s) and variable(s). -----
0018.00 /*

F2=JDE Command Line F5=ADDBKP F6=ADDBKP w/prompt F7=DSPPGMVAR
F8=CHGPGMVAR F13=Display Indicators F16/15=Scan Pwd/Bkwd F24=More

```

Note: The source code is displayed in browse mode, so you cannot edit or change any code.

To set the break point

Set a break point on the line testing the job type in order to change a variable in the CL. The variable &JOBTYPE normally edits against a batch program being executed by calling it from a command line.

1. Find the line of code that contains the variable &JOBTYPE.

Figure 28–7 JDE Visual Debug screen

```

93701          JDE Visual Debug          JDESRC          JDFSRC
Scan:          J928401
Current Breakpoint: /0001
0044.00 /*
0045.00 /* ----- Override Printer files to one spool file. ----- *
0046.00 /* *
0047.00 OVRPRTF FILE(R98COVER ) TOFILE(R928401) SHARE(*YES) *
0048.00 OVRPRTF FILE(R98RPTH ) TOFILE(R928401) SHARE(*YES) *
0049.00 OVRPRTF FILE(R928401) SHARE(*YES) *
0050.00 /*
0051.00 /* ----- Retrieve job name and submitting message queue. ----- *
0052.00 /* *
0053.00 RTVJOBA JOB(&JOBID) SMMMSGQ(&PMMSGQ) TYPE(&JOBTYPE)
0054.00 IF COND(&JOBTYPE='1') THEN(DO)
0055.00 SNDPGMMSG MSGID(JDE9991) MSGF(QJDEMSG) +
0056.00 MSGDTA('J928401') TOPGMQ(*EXT)

F2=JDE Command Line F5=ADDBKP F6=ADDBKP w/prompt F7=DSPPGMVAR
F8=CHGPGMVAR F13=Display Indicators F16/15=Scan Pwd/Bkwd F24=More

```

2. Press F5 anywhere on the line containing &JOBTYPE to set the breakpoint.
 - The line is highlighted, indicating that a breakpoint has been set on that line.

To continue execution

1. Allow your program to continue executing. Press F3 to continue to a breakpoint.

- The line on which you set the breakpoint will display in reverse image. This indicates that the program has reached this point in the CL program and is ready to execute this line.
 - You must change the value of the &JOBTYPE variable to something other than 1 so that the compare to '1' fails.
2. To change the value of &JOBTYPE, press F8 to access the Change Program Variable form.

Figure 28–8 Change Program Variable screen

Change Program Variable (CHGPGMVAR)

Type choices, press Enter.

Program variables:

Program variable &JOBTYPE

-

- Basing pointer variable . . .

-

- + for more values

-

New value 12

Program > J28401 Name, *DPTPGM

3. Complete the Change Program Variable form and press enter.
The value of &JOBTYPE is now changed to your specified value.
4. Press F3 to allow the CL program to continue processing.
The RPG program source is displayed next.

28.4 Features of the JD Edwards World Source Debugger

Function	Description
F2	To display a JD Edwards World command line window, press F2.
F3	Once the program hits a breakpoint or when you first enter the source, F3 will allow the program to continue processing.
F5	Position the cursor on an executable line and press F5 to add a breakpoint. You cannot add breakpoints to a comment line, only to executable lines. Once the breakpoint is set, the line will be highlighted. If the program executes a line with a breakpoint set on it, the line will appear in reverse image and the program will pause before executing the line.

Example F5

Figure 28–9 Example F5

```

93701 Scan: JDE Visual Debug JDESRC JDFSRC
          Current Breakpoint: /0001 P01051
0319.00 C*
0320.00 C* $AUTO CASEQ'1' S003 24
0321.00 C*
0322.00 C* END
0323.00 C*
0324.00 C* Begin normal program processing.
0325.00 C*
0326.00 C*
0327.00 C* *INLR DOWEQ'0'
0328.00 C*
0329.00 C* If subfile page display not set, set subfile page display.
0330.00 C*
0331.00 C* #SPRNO IFLE 0
0332.00 C* Z-ADD1 #SPRNO
0333.00 C* END
0334.00 C*
0335.00 C* Write video screen.
0336.00 C* #MEMO determines which format is written

F2=JDE Command Line F5=ADDBKP F6=ADDBKP w/prompt F7=DSPPGMVAR
F8=CHGPGMVAR F13=Display Indicators F16/15=Scan Pwd/Bkwd F24=More

```

Function	Description
F6	Position the cursor on an executable line and press F6 to add a breakpoint with a prompt. You cannot add breakpoints to a comment line, only to executable lines. Once the breakpoint is set, the line will highlight. If the program executes a line with a breakpoint set on it, the line will reverse image and the program will pause before executing the line.

Figure 28–10 Example F6

```

Add Breakpoint (ADDBKP)

Type choices, press Enter.

Statement identifier . . . . . > 52100 Character value
Program variables: * for more values
Program variable . . . . . *NONE
-
Basing pointer variable . . .
-
* for more values
-
* for more values
Output format . . . . . *CHAR *CHAR, *HEX
Program . . . . . > P01051 Name, *DFTPGM

More...
F3=Exit F4=Prompt F5=Refresh F10=Additional parameters F12=Cancel
F13=How to use this display F24=More keys

```

Use the prompt, after pressing F10, to assign a skip value or breakpoint conditions.

Function	Description
F7	Position the cursor on an executable line and press F7 to display the values of all of the variables on that line. Breakpoints within copy modules will stop at the correct source sequence number.

Figure 28–11 Example F7

```

Display Program Variables

Program . . . . . : P01051
Recursion level . . . . . : 1
Start position . . . . . : 1
Format . . . . . : *CHAR
Length . . . . . : *DCL

Variable . . . . . : *IN99
Type . . . . . : CHARACTER
Length . . . . . : 1
*...+...1...+...2...+...3...+...4...+...5
'0'

Variable . . . . . : *IN93
Type . . . . . : CHARACTER
Length . . . . . : 1
*...+...2...+...3...+...4...+...5
'0'

Press Enter to continue.

F3=Exit  F12=Cancel
```

Function	Description
F8	To change the value of a variable, press F8 and type the correct values in the prompt screen.

Figure 28–12 Example F8

```

Change Program Variable (CHGPGMVAR)

Type choices, press Enter.

Program variables:
Program variable . . . . .
-
- Basing pointer variable . . .
-
- + for more values
-
New value . . . . .
Program . . . . . > P01051      Name, *DFTPGM

Bottom
F3=Exit  F4=Prompt  F5=Refresh  F10=Additional parameters  F12=Cancel
F13=How to use this display  F24=More keys
```

Function	Description
F10	Move Line to Top of Page.
F12	From anywhere on the screen, press F12 to remove the current breakpoint. The line is no longer highlighted, indicating the line is no longer set as a breakpoint. The program will immediately continue processing.
F13	To display the current values of all indicators, press F13.

Figure 28-13 Example F13

```

Display Program Variables

Program . . . . . : P01051
Recursion level . . . . . : 1
Start position . . . . . : 1
Format . . . . . : *CHAR
Length . . . . . : *DCL

Variable . . . . . : *IN
Lower/upper bounds . . . . . : (1,99)
Type . . . . . : CHARACTER
Length . . . . . : 1
Element -----Values-----
1 '0' '0' '0' '0' '0' '0' '0' '0' '0' '0'
11 '0' '0' '0' '0' '0' '0' '0' '0' '0' '0'
21 '0' '0' '0' '0' '0' '0' '0' '0' '0' '0'
31 '0' '0' '0' '0' '0' '0' '0' '0' '0' '0'
41 '0' '0' '0' '0' '0' '0' '0' '0' '0' '0'
51 '0' '0' '0' '0' '0' '0' '0' '0' '0' '0'

Press Enter to continue.

F3=Exit F12=Cancel

```

Function	Description
F15	Type in a value on the Scan Line at the top of the screen and press F15 to scan backward from the point you are at to the end of the source code. If a match is found, the line containing the matching value will be displayed. To continue scanning backward, press F15 again.
F16	Type in a value on the Scan Line at the top of the screen and press F16 to scan forward from the point you are at to the beginning of the source code. If a match is found, the line containing the matching value will be displayed. To continue scanning forward, press F16 again.
F21	To display a command line, press F21.

28.4.1 ENDDBG End Debug

To stop the JD Edwards World Source Debugger, enter ENDDBG from a command line. You can not enter ENDDBG while displaying the source code of a program in debug. This command will end debug mode for all programs in the Debugger at that point.

Note: You can remove a single program from debug mode by using the RMVPGM (remove program) command.

Software Scan and Replace

This chapter contains these topics:

- [Section 29.1, "About Software Scan and Replace"](#)

29.1 About Software Scan and Replace

The Software Scan and Replace feature lets you scan source members to accomplish the following:

- Scan for a particular item and replace it with a new item
- Produce a list of all members that meet the search criteria
- Scan for a particular item and insert a source file after each occurrence

Because you can potentially replace source code across all systems, this job is submitted to batch and held in the job queue until you release it.

To Work with Software Scan and Replace

1. From the Computer Assisted Programming menu (G93), choose Developer's Workbench. From the Developer's Workbench menu (G9362), choose Software Scan and Replace.

Figure 29-1 Software Scan and Replace screen

```

98810                Software Scan & Replace

System code. . . . . 55                      (Blank = all)
Function code. . . . . RPG                    (Blank = all)
Specific object. . . . .                      (Generic = *)   (Blank = all)
File ID. . . . . JDESRC
Source library . . . . . DEVSRG (Defaults to source libr in member master)
Scan argument:

  I00SC
  (If search argument contains imbedded blanks enclose argument with >.)

Replacement argument:

  I00RSC
  (If argument contains imbedded blanks enclose argument with >.)

Column replacement: Beginning column - ____ Ending column - ____

Replacement Overflow Code . . . . .

Insert Source From: File. . . . . Libr. . . . . Member. . . . .

```

The previous screen illustrates how you replace the copy module I00SC with the copy module I00RSC for all RPG members coded to install system code 55.

2. Complete the form and press Enter.

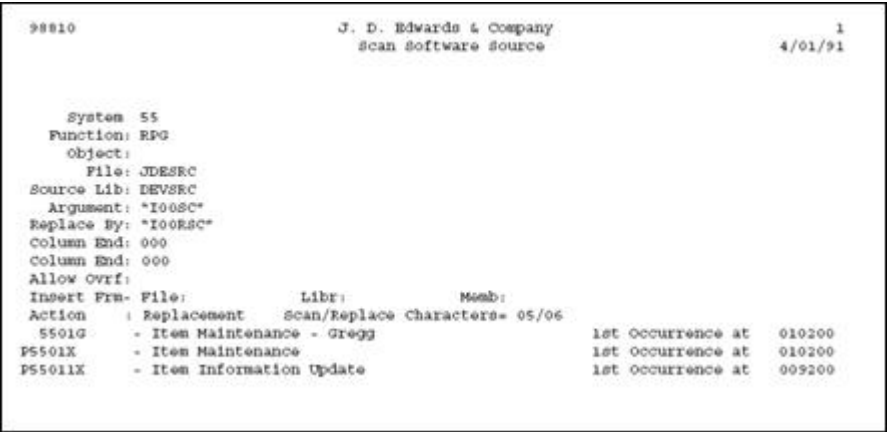
The job submits to batch and a message displays. The job is held on the job queue.

- 3. When you are ready to process the job, go to the Work with Submitted Jobs form (hidden selection 33) and release the job.

29.2 Report

When the job completes, it produces a report that indicates those objects where the scan and replace occurred.

Figure 29–2 Scan Software Source screen



29.2.1 Guidelines

If you leave the Replacement argument field blank, the utility produces a listing of all source members that meet the search criteria.

Because this job could be used to update all code across systems and could severely impact processing, it is automatically held on the job queue.

Use this job to replace a copy module across systems or determine a listing of members that meet certain criteria. Use with caution.

Performance Issues

This chapter contains these topics:

- [Section 30.1, "General Performance Issues"](#)
- [Section 30.2, "DREAM Writer"](#)

30.1 General Performance Issues

Following are some performance issues you should consider when executing JD Edwards World software, changing current JD Edwards World programs, or writing new programs:

- Purge your files on a regular basis to avoid excess, unnecessary records existing in files. The REUSEDLT *YES parameter on a Physical file can be used on files where records are deleted to minimize file expansion and contraction. G9645/14 will present a list of P98999 versions which can be used to RGZPFM the named files. The RGZPFM command, in general, removes deleted records and rewrites the remaining records in a file.
- Minimize the number of open files in a program. If a file may not be used, define it as a User Controlled Open file.
- Use User Spaces and User Indexes wherever possible.
- Use File Servers and Functional Servers wherever possible.
- Minimize the number of subroutine calls within your program.
- Weigh the advantages of inter-program calls. Although this method is very modular in design, you should consider the effect on performance.
- Substitute the comparison of a literal with the comparison of a variable.

For example: Use *ON and *OFF to set an indicator on and off rather than a 1 and 0.

- Consider flexibility versus performance when using User Defined Codes, Vocabulary Overrides, and loading Data Dictionary values extensively.

30.2 DREAM Writer

One definition of "Performance Problem" is that some Dream Writers take a long time. The usual symptom is that the user does a Work with Submitted Jobs and sees the job spending a long time "indexing". Programs which have a very large based-on file are the prime suspects. P09800 is not a suspect!

The problem in these cases often involves the IBM Query File Optimizer. Simply stated, the optimizer tries to find an existing access path (logical file) that it can use to

select records. If it can't find one or finds one that will return more than 20% of the file, it builds a whole new access path which takes a long time for large files.

30.2.1 Possible solutions:

Solution 1

The first assumption is that the applicable IBM PTFs have been applied.

1. On the DW Additional Parameters screen, there is a File Output Type field. An F1 on this field shows that values 2 and 4 use a logical file. If an existing logical should be used, enter a 2 in the File Output Type and the file name in the Override Logical File field. This setup often makes the DW run faster since the IBM Query File Optimizer is bypassed by using an LF rather than the OPNQRYF.
2. To have DW create the Logical File for you, enter a 4 in the File Output Type and blanks in the Override Logical file field. This option will use the DW Data Selection and Sequencing parameters to create a Logical File over the based-on physical, and will name it by replacing the P in the program name with an F and adding a 00n suffix.
3. **IMPORTANT:** You must then run the DW so the LF will be created. Then, before going back into the DW with a 2 to change, (which will cause the LF to be deleted) you must find the file using a DSPDDBR on the based-on file. Do RNMOBJ so DW will not find this new file. Then, go back to the Versions list and enter a 2 to change the DW version. DW will automatically have changed the File Output Type to a 2 and have entered the name of the logical file it created. Enter the file name from the above RNMOBJ command.
4. When the File Output Type is a 2, the options for Data Selection Values and Data Sequencing Values will not show up on the change window. This is because the values in the LF will be used. If the values need to be changed, go to Step 3C.
5. On the DW version list, if you use option 7, you will see either the OPNQRYF statement or the DDS for the logical file.

Solution 2

The based-on file can be changed to a logical file attached to the Physical file, but then the File Output Type must be set to 1. This reintroduces the OPNQRYF command into the process using the Query File Optimizer. The Data Selection and Sequencing options are now available.

Part V

Group Jobs

This part contains these chapters:

- [Chapter 31, "Overview to Group Jobs"](#)
- [Chapter 32, "Access the JD Edwards World Group Job window"](#)
- [Chapter 33, "Work with the Attention Menu window"](#)
- [Chapter 34, "Work with IBM Pass-Through"](#)

Overview to Group Jobs

This chapter contains these topics:

- [Section 31.1, "About Group Jobs"](#)

31.1 About Group Jobs

Group Jobs is an IBM concept which allows the user to switch between sessions on the Series i. This involves communication with the Series i. Most users now use IBM Client Access which can have several sessions active. Switching between these sessions does not require Series i communication. The following is a description of JD Edwards's implementation of IBM Group Jobs.

The Group Jobs form allows you to perform a number of tasks from a single form, saving you both time and effort. You can perform the following functions from this form:

- Run up to 16 jobs under a single sign on
- Execute (or run) CL and fast path commands from a single command line
- Execute (or run) JD Edwards World Hidden Selections

In addition to the added convenience, the Group Jobs function keeps the files for each of the jobs selected opened, whether they are currently active or not.

This section covers the following tasks:

- Access the JD Edwards World Group Job Form
- Create New Group Jobs
- Activate Suspended Group Jobs
- Terminate Job Groups
- Change to Non-Group Mode
- Sign Off with Suspended Group Jobs

Access the JD Edwards World Group Job window

This chapter contains these topics:

- [Section 32.1, "About the JD Edwards World Group Job Window"](#)
- [Section 32.2, "Accessing the JD Edwards World Group Job Window"](#)
- [Section 32.3, "Creating New Group Jobs"](#)
- [Section 32.4, "Activating Suspended Group Jobs"](#)
- [Section 32.5, "Terminating Group Jobs"](#)
- [Section 32.6, "Changing to Non-Group Mode"](#)
- [Section 32.7, "Signing Off with Suspended Group Jobs"](#)
- [Section 32.8, "Work with Non-JD Edwards World Group Jobs"](#)
- [Section 32.9, "Advanced Functions of the JD Edwards World Group Job Window"](#)
- [Section 32.10, "JD Edwards World Group Job Window Summary"](#)

32.1 About the JD Edwards World Group Job Window

32.1.1 Before You Begin

For a user to access the JD Edwards World Group Job window at any time, the Esc (ATTN) key program should be set to call the JD Edwards World Group Job window program (P98GRP).

To set the ATTN key program

1. From the Security Officer Menu (G9401) choose User Information.

Figure 32–1 *User Information screen*

```

0092                User Information                Action Code. . . . . I

User ID. . . . . TEACH
Library List . . . . . QTEMP JDFROBJ COMMON PRODDATA JDFSEC QGPL

User Security:                A J K DP F
  User Key . . . . .      - - - - - Allow Command Entry (Y/N). Y
  Initial Menu to Execute. . . . . A Allow Menu Traveling (Y/N) Y
  Initial Program to Execute . . . . .      Allow Fast Path (Y/N). . . Y
Menu Level. . . . .      -
User Type. . . . . TEACHER
User Class/Group . . . . .
Batch Job Queue. . . . . QBATCH
Job Scheduling Priority. . . . . 5 5
Logging(level/severity/messages) . . . . . 4 00 *NOLIST
Output Queue . . . . . P4B
Optional Printer File Library. . . . .
Current Library. . . . .
Employee Address Number (PPAT) . . . . .

Get Attention Program          P9EQEP
F6=Display/Lang Pref  F9=Library Inquiry  F21=Print Lib List  F24=More Keys

```

2. Enter the JD Edwards World Group Job window program ID (P98GRP) in the Set Attention Program field.

32.2 Accessing the JD Edwards World Group Job Window

After the Attention Key program has been set up in the JD Edwards World environment, you can access the Group Job window.

To access the JD Edwards World Group Job window

1. Sign off and sign back on to reset the Attention key program within the JD Edwards World Menu Driver.
2. Press the Esc (ATTN) key and the following is displayed.
3. Whenever the Group Job window is displayed, an entry can be made in the Description field <Enter> to describe the session associated with that job.

Figure 32–2 General Business Systems screen

```

GO                               J.D. Edwards & Company
                                General Business Systems

... GENERAL BUSINESS SYSTEMS
  2. Address Book
  3. General Accounting
  4. Accounts Payable
  5. Accounts Receivable
  6. Financial Reporting
  7. Modeling & Allocation
  8. Fixed Asset
  9. Payroll
 10. Human Resources
 11. Electronic Mail

98GRP-----Group  Jobs-----E
 Q  Description      Group Job   Status
-----
 1  -----
 2  -----
 3  -----
 4  -----
 5  -----
 6  -----
 7  -----
 8  -----
 9  -----
10  -----
11  -----

Selection or command
*****>

Cmd/HS:
Opt: 4=Sel 9=End      F3=Exit F4=Prompt F5=New Job

```

32.3 Creating New Group Jobs

To create new group jobs

1. Press F5 on the Group Jobs window for New Job.

- When the JD Edwards World Menu Driver is displayed, (J98INIT is the initial program) press the Esc (ATTN) key and the following is displayed.

Figure 32–3 General Business Systems screen

```

G0                                J.D. Edwards & Company
                                General Business Systems

... GENERAL BUSINESS SYSTEMS
2. Address Book
3. General Accounting
4. Accounts Payable
5. Accounts Receivable
6. Financial Reporting
7. Modeling & Allocatio
8. Fixed Asset
9. Payroll
10. Human Resources
11. Electronic Mail

98GRP-----Group Jobs-----E-
 Q  Description      Group Job   Status
  - - - - -
  - - - - - GROUP02    Active
  - - - - - GROUP01    Suspended
  - - - - -
  - - - - -
  - - - - -
  - - - - -
  - - - - -
  - - - - -
  - - - - -
  - - - - -

Selection or command
====>

Cmd/HS:
Opt: 4=Sel 9=End  F3=Exit F4=Prompt F5=New Job

```

The new group job GROUP02 is now in process. The group job GROUP01 was suspended when the function key F5 was pressed.

Note: If you are set up to access JD Edwards World software by J98INITA, your library list selection list will appear when F5 is used. Select an environment and then you will be able to display the JD Edwards World Group Job window.

32.4 Activating Suspended Group Jobs

To activate suspended group jobs

Press the Esc (ATTN) key to display the JD Edwards World Group Job window and enter option 4 next the job you want to activate.

- All suspended group jobs are displayed in the window.
- Any suspended group job can be activated, as illustrated below.

Figure 32–4 Group Jobs window

```

G0                                J.D. Edwards & Company
                                General Business Systems

... GENERAL BUSINESS SYSTEMS
2. Address Book
3. General Accounting
4. Accounts Payable
5. Accounts Receivable
6. Financial Reporting
7. Modeling & Allocatio
8. Fixed Asset
9. Payroll
10. Human Resources
11. Electronic Mail

98GRP-----Group Jobs-----E-
 Q  Description      Group Job   Status
  - - - - -
  - - - - - GROUP02    Active
  - - - - - GROUP01    Suspended
  - - - - -
  - - - - -
  - - - - -
  - - - - -
  - - - - -
  - - - - -
  - - - - -
  - - - - -

Selection or command
====>

Cmd/HS:
Opt: 4=Sel 9=End  F3=Exit F4=Prompt F5=New Job

```

32.5 Terminating Group Jobs

Any group job, active or suspended, may be terminated from the JD Edwards World Group Job window.

To terminate group jobs

Enter option 9 next to the group job you want to terminate.

Figure 32–5 *Group Jobs window*

[illegible]

32.6 Changing to Non-Group Mode

To change to non-group mode

Enter option 9 beside all active and suspended group jobs.

Figure 32–6 *Group Jobs window*

[illegible]

32.7 Signing Off with Suspended Group Jobs

You can use two different methods to sign off with suspended group jobs.

To sign off with suspended group jobs

Select one of the following methods:

1. Press F18 within the JD Edwards World Group Job window.

2. Enter SIGNOFF, 90, or ".." on the JD Edwards World Group Job Cmd/HS command line.

Note: Because group jobs are created under one sign on, all group jobs are terminated when the signoff command is executed.

32.8 Work with Non-JD Edwards World Group Jobs

To work with non-JD Edwards World group jobs

To create group jobs that call a program outside the JD Edwards World software, the JD Edwards World Group Job window allows an external program to be executed. In addition, the Esc (ATTN) key can be pressed within the external program and still allow access to the JD Edwards World group jobs.

1. To call an external program, press F11 within the JD Edwards World Group Job window.

The following illustrates what will be displayed when F11 is pressed.

Figure 32–7 Change Library List screen

```

Change Library List (CHGLIBL)

Type choices, press Enter.

Libraries for current job . . . > QTEMP          Name, *SAME, *NONE
                                > TCA1020BJ
                                > JDFOBJ
                                > TCA102DTA
                                > A3SHARE
                                > TRNSHARE
                                > TCA102SRC
                                > JDESRC
                                > VAPAY2JLIB
                                > VBPAY2JLIB
                                > VCPAY2JLIB
                                > VPAYLIB
                                > QPRT5225
                                * for more values > QGPL          Name, *SAME, *CRTDFT
Current library . . . . . *SAME

Bottom
F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys
  
```

2. Complete the Change Library List screen.

You can add libraries related to the external program. Libraries currently in the library list can be removed if desired. However, the following libraries must be left in the library list to retain the link to the JD Edwards World group jobs:

- QTEMP
- Library containing F9220 (JD Edwards World Vocabulary Overrides)
- Library containing F0082 (JD Edwards World Menu Master)
- Library containing F0092 (JD Edwards World User Information)
- Library containing JD Edwards World Objects (For example, RPG, CL, DSPF)

After the CHGLIBL command has been executed, the CALL command prompt is displayed.

3. Enter the external program.

The following illustrates the CALL command prompt.

Figure 32–8 Call Program screen

```

Call Program (CALL)

Type choices, press Enter.

Program . . . . . *LIBL      Name
Library . . . . .          Name, *LIBL, *CURLIB
Parameters . . . . .
          * for more values

Bottom

F3=Exit  F4=Prompt  F5=Refresh  F12=Cancel  F13=How to use this display
F24=More keys

```

When the CALL command is executed, the external program will be executed.

- To work with a JD Edwards World group job, the Esc (ATTN) key can be pressed to display the JD Edwards World Group Job window.
- Any suspended group job can be activated from the JD Edwards World Group Job window.

32.9 Advanced Functions of the JD Edwards World Group Job Window

32.9.1 JD Edwards World Hidden Selections

Hidden Selections are commands and features of the JD Edwards World products that are not available through a menu selection.

- Most JD Edwards World Hidden Selections (31+) can be executed from the command line at the bottom of the JD Edwards World Group Job window.
- The JD Edwards World Hidden Selection window (HS) can be used to display and execute hidden selections.
- JD Edwards World Hidden Selection (Menu) Security is used when users execute hidden selections.
- No JD Edwards World Menus or JD Edwards World Hidden Selections related to menus are allowed, (for example 27 or 29).

32.9.2 Entering Commands

You can enter any command on the command line at the bottom of the JD Edwards World Group Job window.

- Press F4 to prompt for a command.
- Place a "?" in front of a command to prompt.
- Press F9 to retrieve previous commands.
- Any parameters you enter while in prompt mode are not retrieved.
 - The last 10 previous commands are saved.

- Only successfully executed commands are saved.
- When you exit by pressing F3, previous commands are lost.
- JD Edwards World Fast Path Commands from User Defined Code 00/FP can be executed. F13 to display all Fast Path Commands.
 - To retain all commands entered and retrieve parameters entered in prompt mode, access the IBM Command Entry screen from the JD Edwards World Group Job window (For example, JD Edwards World Hidden Selection 36) and enter commands.
 - Commands can only be executed if there is a value of "Y" or " " in the Allow Command Entry (Y/N) field defined in the JD Edwards World User Information option found on A94.

32.9.3 Securing the CHGJOB Command (HS33)

HS 33 uses the IBM command WRKSBMJOB. On this command screen, a user can access the CHGJOB command to move jobs to a different queue or change priorities.

Caution: Securing the CHGJOB command is problematic since JD Edwards World uses this command during the sign on process.

As of JD Edwards World release A81CU5 or A73CU15, the following workaround is available.

1. Objects J00WSJ, P00WSJ, V00WSJ and X00WSJ should be in the JD Edwards World object library.
2. Change the ZHIDDEN menu selection with SELECTION33 on it so the Option Key has J00WSJ rather than J00SBMJOB.
3. Sign out of the environment and back in. HS33 will present the information on a JD Edwards World menu which enables Function key and Option key security.

Note: Use Knowledge Document WST-00-0023 for IBM releases below V4R5.

32.10 JD Edwards World Group Job Window Summary

The program allows you to:

- Create up to 16 jobs per sign on
- Execute commands, JD Edwards World hidden selections, JD Edwards World Fast Path Command, and JD Edwards World Fast Path Menu Execution

Function Key	Description
F3	Exit the JD Edwards World Group Job window
F4	Prompt a command
F5	Create a new JD Edwards World group job
F6	Submit job to batch
F8	JD Edwards World Menu Word Search

Function Key	Description
F9	Retrieve previous command
F11	Create a new Non-JD Edwards World group job
F13	Display all fast path commands
F18	SIGNOFF all group jobs

Selection Exits	Description
4	Activate a suspended group job
9	End a group job

The JD Edwards World Group Job window is not accessible when using:

- SysReq (Source Machine Only)
- A program that has reset the ATTN Key program (For example, OFFICE/400)

Work with the Attention Menu window

This chapter contains these topics:

- [Section 33.1, "About the Attention Menu Window"](#)
- [Section 33.2, "Accessing the JD Edwards World Attention Menu Window"](#)
- [Section 33.3, "Summary of JD Edwards World Attention Menu Window Functions"](#)

33.1 About the Attention Menu Window

The JD Edwards World Attention Menu window program is a generic program that allows you to access up to 15 predefined programs via the Esc (ATTN) Key. The 15 predefined programs are associated with options on a JD Edwards World Menu.

Note: Each user can be assigned a different JD Edwards World Menu

33.1.1 Before You Begin

To access the JD Edwards World Attention Menu window at any time, the Set Attention Program field on the JD Edwards User Information video should be set to a JD Edwards World Menu, for example *G92.

The following illustrates how the Esc (ATTN) key program is set in the JD Edwards World software. The User Information screen can be accessed from the Security Officers Menu (G9401).

Figure 33–1 User Information screen

0092 User Information		Action Code. I
User ID.	TEACH	
Library List	OTEMP JDFOBJ COMMON PRODDATA JDFSEC OGPL	
<u>User Security:</u>		
User Key	A J K DP E	
Initial Menu to Execute.	A	Allow Command Entry (Y/N). Y
Initial Program to Execute		Allow Menu Traveling (Y/N) Y
Menu Level.		Allow Fast Path (Y/N). . . X
User Type.	TEACHER	
User Class/Group		
Batch Job Queue.	QBATCH	
Job Scheduling Priority.	5 5	
Logging(level/severity/messages)	4 00 *NOLIST	
Output Queue	P4B	
Optional Printer File Library.		
Current Library.		
Employee Address Number (PPAT)		
Set Attention Program.	*G92	
F6=Display/Lang Pref F9=Library Inquiry F21=Print Lib List F24=More Keys		

Note: An * (asterisk) must precede the menu name.

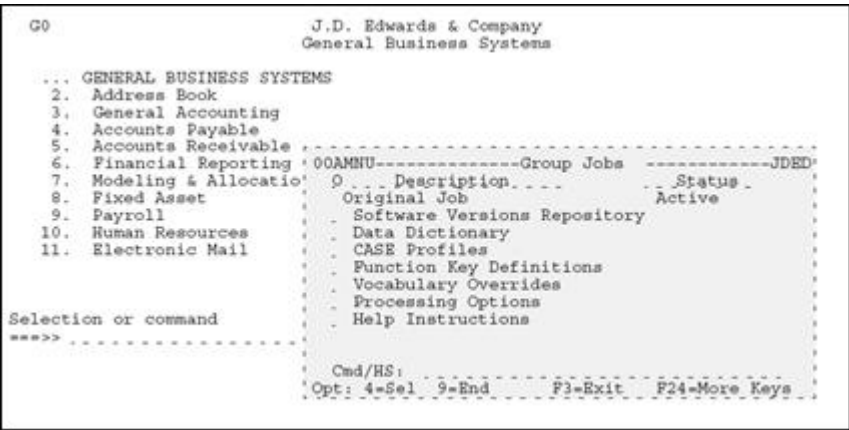
33.2 Accessing the JD Edwards World Attention Menu Window

After the Esc (ATTN) key program has been set up for the JD Edwards World software you can access the JD Edwards World attention menu window.

To access the JD Edwards World attention menu window

1. Sign off and sign back on to reset the Esc (ATTN) key program within the JD Edwards World Menu Driver.
2. Press the Esc (ATTN) key and the menu options for the menu will be displayed as follows.

Figure 33–2 Group Jobs window



Note: Original Job refers to the current job that has been converted to a group job. The remaining jobs refer to the first 15 interactive programs on the menu which the user is authorized to.

33.3 Summary of JD Edwards World Attention Menu Window Functions

The program allows you to:

- Access 15 predefined programs via the Esc (ATTN) Key
- Execute commands, JD Edwards World Hidden Selections, JD Edwards World Fast Path Commands, and JD Edwards World Fast Path Menu Executions

Function Key	Description
F3	Exit the JD Edwards World Attention Menu window
F4	Prompt a command
F6	Submit a job to batch
F8	JD Edwards World Menu Word Search
F9	Retrieve previous command
F13	Display all fast path commands

Function Key	Description
F18	SIGNOFF all group jobs

Selection Exits	Description
4	Activate a menu selection
9	End a group job (Ignored on a Menu window)

The JD Edwards World Attention Menu window is not accessible while using

- SysReq (Source Machine Only)
- a program that has reset the Esc (ATTN) Key program (for example OFFICE/400)

Work with IBM Pass-Through

This chapters contains these topics:

- [Section 34.1, "About Working with IBM Pass-Through"](#)
- [Section 34.2, "Setting Up Access to Remote Locations"](#)
- [Section 34.3, "Using IBM Pass-Through with Group Jobs"](#)

34.1 About Working with IBM Pass-Through

Note: This section is predicated on Series i network setup enabling use of the IBM command STRPASTHR. The steps for that implementation will not be covered in this manual.

To create group jobs on remote locations and still retain a link to the group jobs created on the source machine, use IBM Pass-Through.

34.2 Setting Up Access to Remote Locations

To set up access to remote locations

To set up access to remote locations, go to the DREAM Writer versions list for Form ID P98GRP5.

Figure 34-1 Versions List screen

98300	Versions List	Form <u>P98GRP5</u>		
Skip to Version:				
<u>Q</u>	<u>Version</u>	<u>Description</u>	<u>User</u>	<u>Chg Date</u>
-	XJDE0001	Denver A	DEMO	08/23/93
-	XJDE0002	Denver C	DEMO	08/23/93
-	XJDE0003	Denver D	DEMO	08/23/93
-	XJDE0004	Denver E	DEMO	08/23/93
-	XJDE0005	Denver I	DEMO	08/23/93
-	XJDE0006	Atlanta	DEMO	11/13/91
-	XJDE0007	Chicago	DEMO	11/13/91
-	XJDE0008	New York	DEMO	11/13/91
-	XJDE0009	Dallas	DEMO	11/13/91
-	XJDE0010	Houston	DEMO	11/13/91
-	XJDE0011	San Francisco	DEMO	11/13/91
-	XJDE0012	Washington DC	DEMO	11/13/91
Opt: 1=Run 2=Chg 3=Add 4=Rpt Dist 5=Cover 6=Prt Ovr 8=Repair 9=Dlt F13=Form				

The processing options for each version provide setup parameters for the STRPASTHR command allowing access to a remote location. The following illustrates the processing options.

Figure 34–2 Processing Options Revisions screen

```

98312                Processing Options Revisions  Form ID. . . . P98GRP5
Denver C              Version. . . . 0002

This job has various options described below. Enter the desired values and
press ENTER to continue.

Destination Virtual Control Unit                V5251

Enter ONE of the following:

1) Destination Location:                        JDEC
   (If APPN routing can be used.)

2) APPC Device(s):
   Communication Device 1:
   Communication Device 2:

   (If S/38's are involved, an APPN
    cannot be used.)

                                Bottom
                                +

                                PS=Printer Overrides

```

Option	Description
Destination Virtual Control Unit	This is the control unit that the user will connect to at the remote location. The first available device on the control unit will be selected.
Destination Location (Used in AS/400 Environment)	This is the APPN network name for the remote location.
APPC Device(s) (Used in S/38 Environment)	These are the APPC devices that identify the route to the remote location. <ul style="list-style-type: none"> Only one intermediate node is supported.

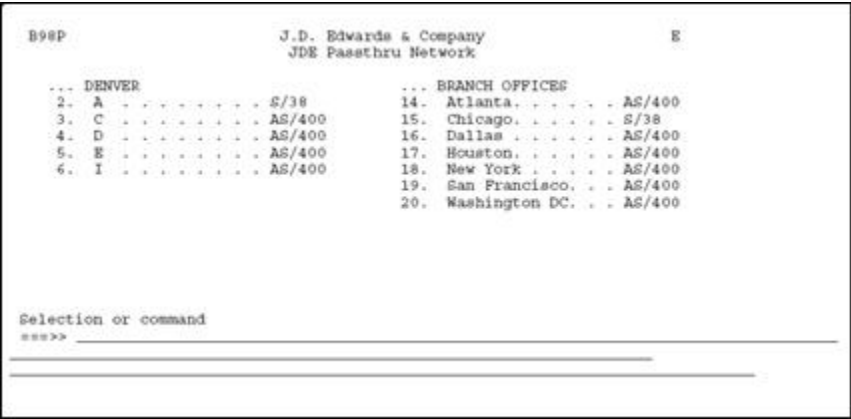
34.3 Using IBM Pass-Through with Group Jobs

To use IBM Pass-Through with Group Jobs

1. Use the JD Edwards World menu B98P to start an IBM Pass-Through session to a remote machine.
2. Use the JD Edwards World Menu Revisions (1/G901) to attach your user defined DREAM Writer Form ID P98GRP5 versions to a menu (B98P).

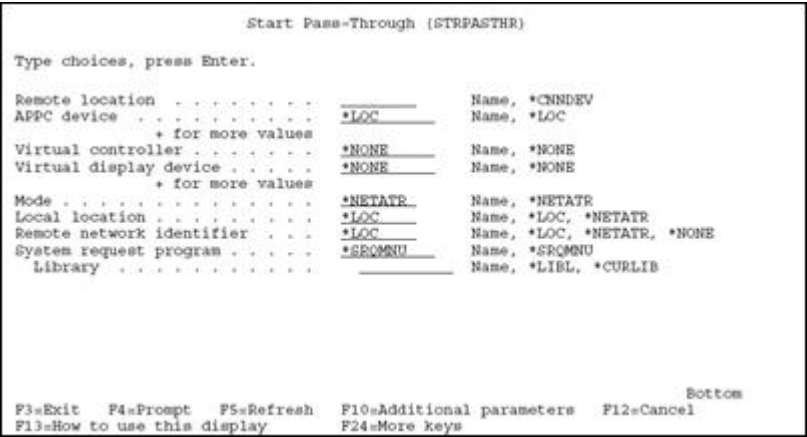
When an option is selected on the menu, the IBM Start Pass-Through command will be executed to the remote machine, and still retain a link to the source machine group jobs.

Figure 34-3 JDE Passthru Network screen



The mechanism used to attach remote locations to the JD Edwards World Group Job window on the source machine is a parameter on the STRPASTHR (Start Pass-Through) command. The following illustrates the link to the source machine.

Figure 34-4 Start Pass-Through screen



The SRQ10PGM (SysReq 10) parameter allows a program to be called on the source machine from the remote location. By entering the JD Edwards World Group Job window program (P98GRP) in this parameter, the JD Edwards World Group Job window can be displayed on the remote location by pressing SysReq 10, NOT the ATTN Key. This allows access to all suspended group jobs on the source machine and other remote locations.

Part VI

Universal File Converter

This part contains these chapters:

- [Chapter 35, "Overview to Universal File Converter"](#)
- [Chapter 36, "Set Up Universal File Converter"](#)
- [Chapter 37, "Work with Crossover Rules"](#)
- [Chapter 38, "Work with File Conversion"](#)
- [Chapter 39, "Print a Report"](#)
- [Chapter 40, "Create Conversion Versions"](#)
- [Chapter 41, "Work with the Data Dictionary Glossary by File"](#)

Overview to Universal File Converter

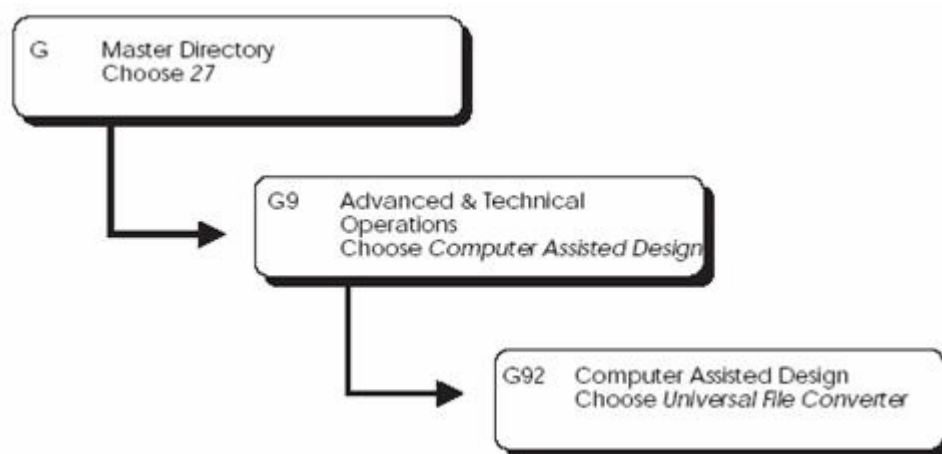
This chapter contains these topics:

- [Section 35.1, "About Universal File Converter"](#)

35.1 About Universal File Converter

JD Edwards World Universal File Converter maps data from one data file resident on the Series i to another file on the same Series i using crossover rules. A DREAM Writer version can be set up so that the conversion can be repeated many times for a standing process or just once for a conversion process.

Figure 35–1 Path to the Universal File Converter



JD Edwards World Universal File Converter uses Crossover rules to map data:

- From one file to another file
- From one file to multiple files
- From multiple files to a single file

Caution: Do not attempt to use UFC on a file that contains double byte data. The converter program may corrupt the integrity of the bracketing shift in and shift out characters that are automatically inserted by double byte terminals.

The UFC does a character at a time move of the data from the input file data location into the output file data location. For this reason it is not suited to large, repeated data transfers. It is suited to one time data file conversions or small scale frequent data import situations.

The Cross Over Rules file defines the association between two files and includes data field information.

Figure 35–2 How Crossover Rules Map Data

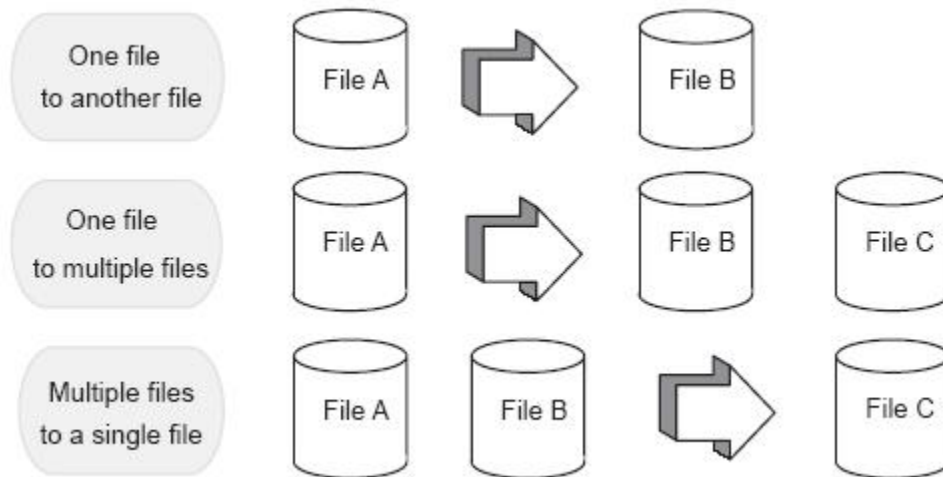


Figure 35-3 How the Cross Over Rules File Defines Associations between Files**Step 1**

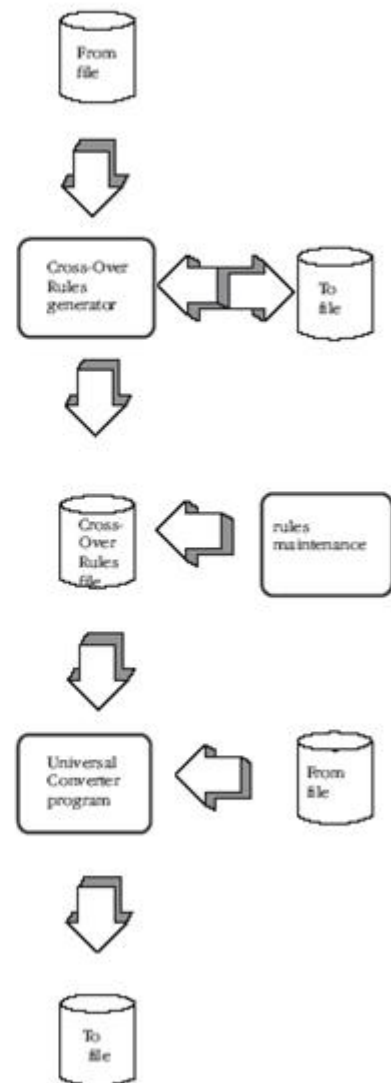
You specify *From* files and *To* files through DREAM Writer processing options. You can specify up to four *To* files. If you require multiple *From* files, specify a join logical as the *From* file in the DREAM Writer "based on" file. The system returns file field information and pre-loads the Cross-Over Rules file with field name, length, size, type and reference (data dictionary name). The system pre-loads information in the Cross-Over Rules file for all fields that have the same reference (data dictionary field name) as the *From* file.

Step 2

You must manually associate the fields that were not automatically loaded in the Cross-Over Rules file. If you need special calculations for a field, you can specify special processing key words in the Conversion Rule field. You can also add the calculations into an external program that can be called from the converter program. The external program needs several parameters that are sent and passed back to the converter program. These parameters are: data, error, *From* field name, *To* field name, and number of *To* file records. You must specify the external program in the Conversion Rule field in the Cross-Over Rules file.

Step 3

In this step you specify the form ID and the version you selected in the first step. The *From* and *To* files should be the same (or exact equivalent) as the files specified in Step 1. The converter program accesses the cross-over instructions for the "From/*To*" combination and loads the information to arrays. The system then processes the arrays for each field that has an association. Finally, the system transfers the value in the *From* file to the *To* file.

**Special Processing**

Special processing procedures are available to help you in the conversion of one field to another.

To execute any of the special processing procedures listed below, you must type the appropriate key word into the *From* or *To* Conversion Rule field. This is explained in Detail Cross Over Rules, later in this guide. There are special keywords for the following:

Field	Explanation
Dates	The converter uses a keyword to decide what date translation is necessary.

Field	Explanation
Numeric Fields	The converter translates non-packed numeric data to packed data or vice versa, depending on your need. It also maintains decimal alignment, performing rounding or zero padding if required. Alphanumeric representations of numeric fields can be translated to numeric fields. Numeric fields can be translated into alphanumeric fields.
Business Unit	The converter processes the field through the Business Unit scrub routine. This routine right adjusts and fills the field with blanks.
Data Dictionary Default	The converter uses the reference field in the To file to access the data dictionary and retrieve the default value for the field.
Initialization	Fields in the To file are initialized to blanks for alphanumerics and zeros for numerics if no fields are defined to map to them.
Next Number	You can specify to have a next number value assigned to a field.
Check Data Dictionary	You can specify to have the value of the field validated against the data dictionary values, ranges, and user defined codes.
User Defined Code Lookup	Use the fields in the From file to look up a user defined code (UDC) and return the associated value in the Description 1 field as the To field value.
Default Constant	Specify constant value, up to six characters, for the To field value.

35.1.1 Database Considerations

The system creates records in the Cross-Over Rules file for each version of cross-over rules you specify. This file contains information about the fields in the From file and the To file and how the two fields are associated.

If the field lengths or characteristics of the files that the cross-over rules have been built upon change, you must redefine the cross-over rules. Otherwise, the rules are based on the erroneous field descriptions.

The system handles extra calculations through called programs specified in the Cross-Over Rules file for each field.

35.1.2 User Responsibilities

You are responsible for developing and maintaining the cross-over instruction rules. If the From file or To file definition of the cross-over instructions changes, you must revise the Cross-Over Rules.

Perform the following tasks:

- Set Up Universal File Converter
- Work with Crossover Rules
- Work with File Conversion
- Print a Report
- Create Conversion Versions
- Work with the Data Dictionary Glossary by File

Set Up Universal File Converter

This chapter contains these topics:

- [Section 36.1, "About Universal File Converter \(UFC\)"](#)
- [Section 36.2, "Understanding the Universal File Converter Setup"](#)
- [Section 36.3, "Setting Up Universal File Converter"](#)

36.1 About Universal File Converter (UFC)

The Universal File Converter is used to import data from one AS/400 physical file to another AS/400 physical file. If you have more than one file to convert, you can set up a separate version for each type of conversion required. The Universal File Conversion Setup program loads information to the Crossover Rules file (F0031) about the fields in the files you are converting.

A major benefit of using UFC is that once the process has been tested, it can be made into a production process using a Dream Writer version.

The system uses the information in the Crossover Rules file to transfer the data from a field in one file to a field in another file, or to a field in multiple files.

This program also has processing options that let you convert data from both JD Edwards World and non-JD Edwards World files.

36.1.1 Before You Begin

- Before you run the setup procedure make sure the To files exist.

Caution: Do not attempt to use the Universal File Converter on a file that contains double byte data. The converter program may corrupt the integrity of the bracketing "shift in" and "shift out" characters that are automatically inserted by double byte terminals.

36.2 Understanding the Universal File Converter Setup

The setup program is the first part of a three-part conversion process. Specify a From file and a To file through the DREAM Writer processing options. You can specify up to four To files. If you require multiple From files, specify a join logical as the From file. This join logical is over all the files you select for the From file. Use the name of the join logical in the first processing option.

The program retrieves field information for all fields in the From file and loads this information to the Crossover Rules file, F0031.

The program then retrieves field information for the To files. If the Reference (data dictionary) field in the To file matches the From file Reference field, the program makes an association between the two fields. The system writes information for the To file to the record in the Crossover Rules file associated with the From file field.

****FILLER** conversions are automatically generated for From file fields with no corresponding To file fields and for To file fields with no corresponding From file fields. ****FILLER** fields will be ignored during the conversion process. You can override a ****FILLER** entry with the appropriate field name, position, and characteristics if the field exists in the file but has a different field name.

If there are any other associations you need, do them manually using the Crossover Rules selection on the menu.

36.2.1 Considerations

UFC is written to map data character-by-character from any physical file resident on the iSeries (AS/400) to any other resident physical file. If the input file resides on a PC, it must be transferred to the iSeries via a data transfer utility.

If you are using UFC to populate Z1 files, Z1 batch processing is recommended for uploading data to the appropriate production files. Areas where these processes are available include:

Area	Menu
Address Book	G01313
General Accounting	G09311
Accounts Payable	G04311
Accounts Receivable	G03311
Time Card Entry	G07121
Budgeting	G1421
EDI	G47 menus
Batch Sales Order Entry	G4212

To protect your production data, create a test library and put a copy of the "from file" and "to file" with attached logical files in it. There may be a logical file attached to the to file with a unique key requirement. By having this file attached during the UFC process, all the key field requirements will be met. Now gather the following two pieces of information. Type command DSPFP on the from file in the test library. Page down to the last panel. Write down the Format name and the number of records in the file. The number of records should be 100 or less for the initial testing. During testing, the number of records can be used to make sure all records were read. When the conversion has been tested successfully a full-file test can be made. The record format name will be used in the last step.

36.3 Setting Up Universal File Converter

Figure 36–1 Universal File Converter screen

```
G9841 J.D. Edwards & Company JDEG
Programmer Universal File Converter
... DATA FILE CONVERSION
2. Version Setup
3. Crossover Rules
4. File Conversion
5. Report

Selection or command
===>
```

To create a new version

1. From the Universal File Converter menu (G9841), choose Versions Setup.

Figure 36–2 Versions Setup screen

```

98300                      Versions Setup                      Form P00120
Skip to Version:_____

Q  Version           Description                User      Chg Date
--  -----
XJDE0001 Generate Crossover Instruction - Sample DEMO    07/23/93
XJDE0002 P0101 - Data Requirements - A7.1          DEMO     07/20/93
--
--
--
--
--
--
--
--
--
--
Opt:  1=Run   2=Chg   3=Add   4=Rpt Dist   5=Cover   6=Prt Ovr   8=Repair   9=Dlt

```

The Versions Setup form displays. The examples shown are for illustrative purposes only.

This program loads information into the Crossover Rules File (F0031) about the fields in the files you are converting. The system uses the information in the Crossover Rules File to transfer the data from a field in one file to a field in another file or to a field in multiple files. Neither file has to be a JD Edwards world file. However, the from file cannot be a multi-member type file. To verify the number of members in a file do the DSPFD command on the from file. Look for the Number of members field. The value should be a one.

- 2.** Make a copy of the XJDE0001 version.

Use your version name and title to tie it to the data you are converting, for example ABCONV and "Address book conversion."

Caution: Do NOT make any changes on the Additional Parameters screen. The based on file should be *NONE and the Format name should be INONE.

- 3.** Display the processing options.

4. Specify a From file and a To file. You can specify up to four To files.

If you require multiple From files, specify a join logical as the based on file for your version. The join logical will encompass all the files you wish to use for the From file.

Note: If either file is set to JD Edwards World file = Y, numeric field names will be looked up for decimal point information. If either file is not created with Data Dictionary data item name, make sure to set the JD Edwards World file = N. Page down to enter the test library name.

5. Return to the Versions List.
6. Execute the version.

After entering the file names and the libraries in the processing options, you do need to submit the DREAM Writer version. P00120 will find the "from" and "to" files and create a record in F0031 for each field in these files. If there is no print file, the F0031 will have version records added for each field in the setup in field name sequence.

Figure 36–3 Processing Options Revisions screen

```

98312                Processing Options Revisions  Form ID. . . . P00120
                                                Version. . . . APCS
Generate Cross Over Instructions
This job has various options described below. Enter the desired values and
press ENTER to continue.
FILE SPECIFICATION:
1. Enter the name of the file to convert the data from.          F92801
   JDE File?                                                    Y
2. Enter the name of the file OR files to convert the data to.
   File 1                                                         F92801U
     JDE File?
   File 2                                                         JDE File?
     JDE File?
   File 3                                                         JDE File?
     JDE File?
   File 4                                                         JDE File?
   JDE File?
                                                FS=Printer Overrides

```

Option	Description
Enter the name of the file	The name of the From file to convert the data from.
JD Edwards World File?	Y if the From file is a JD Edwards World file, or N if it is not. If Y, the first two characters of the field name will be stripped and the remaining field name will be looked up in the JD Edwards Data Dictionary.
Enter the name of the file OR files to convert the data to.	The names of the To files in the spaces provided.
JD Edwards World File?	Y if the To file is a JD Edwards World file, or N if it is not.

Figure 36-4 Processing Options Revisions screen

```

98312                      Processing Options Revisions  Form ID. . . . P00120
                                           Version. . . . APCS
Generate Cross Over Instructions:
This job has various options described below. Enter the desired values and
press ENTER to continue.
3. Enter the library containing the          DEMO
   "from" file. If left blank the
   library list will be searched for
   the "from" files.
4. Enter the library containing the          DEMO
   "To" file. If left blank the
   library list will be searched for
   the "To" file.
                                FS=Printer Overrides

```

Option	Description
Enter the library containing the From file.	The name of the From file library, or leave blank to search your library list.
Enter the library containing the To file.	The name of the To file library, or leave blank to search your library list.

To set up crossover rules

This is where the mapping details are entered. There are many conversion rules in UFC to cover most situations, try them first before using custom Xxxxx programs. You need only map the fields that you are concerned with.

1. From menu G9841, take Selection 3 to go to the Crossover Rules.
2. Inquire on the version name you created and ran in Step 2.

P00120 is pre-loaded in the Form ID field.

Note: The program in Step 2 above attempts to match field names. Any field with no match will have **FILLER for a Field Name. If **FILLER is on either the "From" or "To" side, the data will not be mapped. If the "From" side has fewer **FILLER fields, press F8 to clear them. If the "To" side has fewer, press F9.

The remaining fields will be in alphabetical order, not by position within the record. UFC is usually used to bring data into a JD Edwards World World file, so that assumption will be used in this exercise.

3. Pick a field on the "To" side that you want to map into.
Start with the field name on the "From" side and key in a meaningful field name. Use F14 to enter additional documentation.
4. Set the "From" field "type" to A for Alpha.

This is the most inclusive data type and will be used for numeric fields as well.

You will need to know where the data to be mapped starts in the input record. UFC moves data character-by-character, so if the input data has leading spaces, increment the "Begin Pos" field to skip over them. Similarly, on the "To" side, manipulate the "Begin Pos" as necessary so the data will be mapped correctly. The field names are not important to the process. The type, position and length values are important.

5. On the "To" side, the type can be "A", "S", or "P" for Alpha, Signed or Packed. "A" fields will have the "Byte" field set to the length of the data and the "Dig" field

should be 0."S" fields should have the "Bytes" and "Dig" fields set to the same value. "P" fields should have the "Dig" set to $((\text{"Bytes"} \times 2) - 1)$. It takes 8 bytes to hold 15 packed digits. In most cases, the "Dec" field will be 00.

6. Press F4 to open the fold area. Press F1 on the "Conv Rule" field. The most used functions are the date formats, *DFT and *NN. Most file dates are stored in Julian format in JD Edwards World World. The incoming data should be 6 digits long and will probably be in a *MDY or *DMY format. On the "To" side, the field will also be 6 digits long but will have the *JUL format. The *DFT rule has room for 6 contiguous digits of data. *NN uses the first four digits for system code and the next 2 for the bucket number.
7. When all the incoming fields with data have been mapped, type C in the action code and press enter. All fields in the "To" file will be initialized to the proper empty format if not mapped.

See Also:

- [Chapter 37, "Work with Crossover Rules"](#)

To create a new version of P00111

1. On menu G9843, take Selection 4 to go to the Versions List for P00111.
2. Make a copy of the XJDE0001 version and give it the same name and title as in Step 2A for continuity purposes.
3. On the Additional Parameters screen:
 - Enter the input file name in the Based on file field.
 - Press Enter.
 - Press F12 to return to the Add'l Parameters screen.
 - Ensure the format name is the one from the DSPFD command in the preparation step.
 - Press Enter.
4. Display the Processing Options.
5. Set the Processing Options as follows:
 - Processing Option 1 needs the version of P00120 from Step 2 so it can find the right crossover rule records in the F0031.
 - Enter the appropriate file and library names for options 2, 3, and 4.
 - Option 5 is usually set to 1 to clear the file so just the records from the latest conversion will be there.
 - Option 6 is usually blank.

Caution: Do not change Data Selection and Data Sequencing. They are used for the OPNQRYF statement. Since we want to use the full file, they don't apply.

6. Return to the Versions List.
7. Submit your version.

To review your results

1. Go to Work with Spooled Files and look for R00111.

At the bottom of this spooled file will be how many records were read and written.

2. Type command DSPPFM on the "to" file to see if the mapping is correct.
3. In order to see all the data, press F10, then F11 to see the hexadecimal representation of the data in an over/under presentation.

36.3.1 Trouble Shooting

- Sometimes P00111 will have problems with the input file.
 - On the Additional Parameters screen, if the file output type is 1, change it to 2 and vice versa.
- Make sure the P00111 based on file and format names are correct.
 - See ["To create a new version of P00111"](#).
- There may be just one record in the "to file" and a message in the Joblog about a duplicate record.
 - Type command DSPFD on the file and its logicals to see which one has the "unique" key requirement. You will need to map data to each of the key fields. If there is no matching data, maybe a *NN conversion rule will have to be attached to one of the key fields as a tie breaker.

36.3.2 Key Words

Valid conversion rules keywords include:

Function	Key Words
Date Conversion	*MDY, *DMY, *YMD, *JUL, *SYSVAL
Initialization	*BLANKS, *ZEROES
Business Unit	*RAB right adjust blank fill
Default from Dictionary:	*DEF User Defined Code Lookup, *UDCssssrr where ssss is the System Code and rr is the Code Type
Default Constant	*DFTcccccc where cccccc is the constant
Next Number	*NNssssxx where ssss is the System Code and xx is the Number

Work with Crossover Rules

This chapter contains these topics:

- [Section 37.1, "Working with the Crossover Rules Screen"](#)
- [Section 37.2, "Displaying Field Descriptions"](#)
- [Section 37.3, "Adding Fields"](#)
- [Section 37.4, "Deleting Records"](#)
- [Section 37.5, "Keywords"](#)
- [Section 37.6, "About the Conversion Rule Program"](#)
- [Section 37.7, "Available Functions and Options"](#)

37.1 Working with the Crossover Rules Screen

The Crossover Rules screen lets you add, change, and delete crossover rules used in the Universal File Converter process. Use this form to set up or maintain associations between fields in the From file and the To file. You need only map the fields that you are concerned with.

Note: There are many conversion rules in UFC to cover most situations, try them first before using custom Xxxxx programs.

Lines with **FILLER in either the from file or the to files are ignored enabling you to view From file fields with no corresponding To file fields or view To file fields with no corresponding From file fields.

To work with the Crossover Rules form

1. From the Universal File converter menu, choose Crossover Rules.

Figure 37-1 Crossover Rules screen

```

0031                                Crossover Rules
Action Code . . . . . I
Form Id . . . . . P00120      From File . . . . F4001Z
Version . . . . . 0001
To File Name . . . . F4011Z
Skip to . . . . . From . . . . . To . . . . .

  From File . . . . .      To File . . . . .

Field  T  Begin  ... Field ...      Field  T  Begin  ... Field ...      O
Name  Pos  Bytes Dig Dec      Name  Pos  Bytes Dig Dec      -
**FILLER  A  1  1  00  00      SZACOM  A  288  1  00  00      -
**FILLER  A  1  1  00  00      SZAXP  P  591  8  15  02      -
**FILLER  A  1  1  00  00      SZALD  A  1039  8  00  00      -
**FILLER  A  1  1  00  00      SZALSL  A  1131  8  00  00      -
**FILLER  A  1  1  00  00      SZATM  A  316  25  00  00      -
**FILLER  A  1  1  00  00      SZANI  A  1010  29  00  00      -
**FILLER  A  1  1  00  00      SZAOPN  P  601  8  15  02      -
**FILLER  A  1  1  00  00      SZAPTS  A  755  1  00  00      -
**FILLER  A  1  1  00  00      SZATXT  A  750  1  00  00      -
**FILLER  A  1  1  00  00      SZBIN  A  1139  8  00  00      -
**FILLER  A  1  1  00  00      SZCADC  P  685  4  07  03      -
**FILLER  A  1  1  00  00      SZCDD  A  756  15  00  00      -

Opt: 9=Del F4=Del F6=Add F8=From Fill F9=To Fill F13=File F14=Text

```

The form above displays illustrative data only. This is where the mapping details are entered. The From file fields appear on the left. The To file fields display on the right.

2. Complete the Crossover Rules form.

- F8 and F9 are toggles. Press them to suppress or activate the display of the **FILLER fields in the From and To files.
- Use F6 to pull up full information about both fields on the Crossover Rules screen. See [Section 37.3, "Adding Fields"](#)
- F14 is cursor-sensitive. If you are on a From file field, press F14 to enter text for that field. When the cursor is on a To file field name, press F14 and the Generic Text Form opens for that To file field name. You can also enter text for the From file and To file by placing the cursor on the appropriate field. The field name is highlighted on V0031 if generic text exists. For additional information refer to the *JD Edwards World Computer Aided Software Engineering Guide*.
- Press F4 to display detail information in the detail area.

Field	Explanation
Form Id	This will always be P00120, the Version Setup program.
From File Name	The file that data is being transferred "from" in the file conversion process.
Version	This is the version name you created and ran in the Setup step.
To File Name	The file that data is being transferred "to" in the file conversion process.
Skip to...	Enter either the FROM field name or the TO field name to skip to in the subfile.
From File	Heading for the fields that data is being transferred "from" in the file conversion process.
To File	Heading for the fields that data is being transferred "to" in the file conversion process.

Figure 37-2 Completed Crossover Rules screen

0031 Crossover Rules

Action Code I

Form Id. F00120 From File F92801

Version. APCS

To File Name F92801U

Skip to . . . From To. .

From File To File

Field	T	Begin	...	Field	...	Field	T	Begin	...	Field	...	O		
Name		Pos		Bytes	Dig	Dec	Name		Pos		Bytes	Dig	Dec	
QXKCC	A	47		12	00	00	QXKCC	A	47		12	00	00	-
Desc	Bus Unit	Conv	Rule				Desc	Bus Unit	Conv	Rule				
Key Pos		Ref	XCC		Array	N	Key Pos	00	Ref	XCC		Array	N	
QXKDS	A	9		30	00	00	QXKDS	A	9		30	00	00	
Desc	Descriptio	Conv	Rule				Desc	Descriptio	Conv	Rule				
Key Pos		Ref	XDS		Array	N	Key Pos	00	Ref	XDS		Array	N	
QXKIT	E	41		6	06	00	QXKIT	E	41		6	06	00	-
Desc	Date Last	Conv	Rule				Desc	Date Last	Conv	Rule				
Key Pos		Ref	XDT		Array	N	Key Pos	00	Ref	XDT		Array	N	
QXKIT	E	1		8	08	00	QXKIT	E	1		8	08	00	
Desc	Item ID	Conv	Rule				Desc	Item ID	Conv	Rule				
Key Pos		Ref	XIT		Array	N	Key Pos	00	Ref	XIT		Array	N	

OPT: 9=Del F4=Detail F6=Add F8=From Fill F9=To Fill F13=File F14=Text

Field	Explanation
From File Field name	The name of the field in the FROM file for source data that is used in the conversion process.
From File Field Data Type	The type of data of the field in the "from" file. The data item types are defined in User Defined Codes, system code '98', record type 'DT'. (F1) Usually A for fields in a PC (ASCII) file.
From File Field Begin Pos	The beginning position of the field in the "from" file.
From File Field Size In Bytes	The number of bytes for the field in the "from" file.
From File Field Number of Digits	The actual number of digits in the "from" file field. In a non-packed field this is the same as the number of bytes. Numeric fields)
From File Field Decimal Positions	The number of decimal positions in the "from" file field. (Numeric fields)
From File Field Description	The description of the "from" file field. If the file is declared a JD Edwards World file, this will be the first part of the Data Dictionary description.
REF (Reference)	Use reference field for those conversion rule entries that refer to the Data Dictionary.

Figure 37-3 Completed Crossover Rules screen

Field	T	Begin	...	Field	...	Field	T	Begin	...	Field	...	O		
Name		Pos		Bytes	Dig	Dec	Name		Pos		Bytes	Dig	Dec	
**FILLER	A	1		1	00	00	SZACOM	A	988		1	00	00	-
Desc	FILLER	Conv	Rule				Desc	Apply Comm	Conv	Rule				
Key Pos		Ref	FILLER		Array	N	Key Pos	00	Ref	ACOM		Array	N	

The left side of the form contains information about the From file.

The right side of the form contains information about the To file fields. If the setup program made associations with the To file fields, they display in the right columns when you inquire on a Form ID. Otherwise, these columns contain **FILLER information.

37.1.1 What You Should Know About

You should be aware of the following rules when you work with crossover rules.

Topic	Description
To review a specific set of crossover rules	Enter the DREAM Writer version you used to create the rules.
To update information on Crossover Rules form	Enter the To file field, type, beginning position, number of bytes, and number of digits and decimals, if applicable. Required information is name, type, beginning position and number of bytes.
"Skip to" capabilities	Two "skip to" capabilities are available on this form. You can skip to a field in either the From file or the To file.
*DFT	When using *DFT if the literal is over 6 positions then part it out as if dealing with two fields.
Packed numeric	<p>Packed numeric values use ½ their length plus one in a file. A numeric field defined as a length of 15 only uses 8 bytes.</p> <p>Negative, or signed fields, must have the 'sign' character in the FROM file.</p> <p>In the Crossover Rules, when using a User Defined Code Lookup keyword (*UDCssssrr) and the system code is only 2 numbers, such as 55, enter it as __55 (with leading blanks), not 0055 or 5500.</p>
Negative, or signed fields	Negative, or signed fields, must have the 'sign' character in the FROM file.
Using lookup keyword *UDCssssrr	In the Crossover Rules, when using a User Defined Code Lookup keyword (*UDCssssrr) and the system code is only 2 numbers, such as 55, enter it as __55 (with leading blanks), not 0055 or 5500.

37.2 Displaying Field Descriptions

To display field descriptions

1. Press F13 in the Field Name column for the From or To file.

The File Field Descriptions form displays, as shown below.

Figure 37–4 File Field Descriptions screen

98FFD	File Field Descriptions	S/FMT
File and Libr: F4011Z	PGERTAT71	PF
- I4011Z	- Batch Receiver File - Order De	
- SZEDTY	Record Type A	1 1
- SZEDSQ	Record Sequence . . . P	2 0 2
- SZEKCO	Document Key Company A	5 4
- SZEDOC	Document Number . . . S	9 0 9
- SZEDCT	Document Type A	2 18
- SZEDLN	Line Number P	7 0 20
- SZEDST	Transaction Set . . . A	6 24
- SZEDFT	Translation Format . A	10 30
- SZEDDT	EDI - Transmission D S	6 0 40
Opt: 2=Dictionary 4=Sel F15=Resequene F3=Return		

- When you use option 4 to select a field from the form, the program returns the name, type, number of bytes, number of decimals, number of digits, description, reference, and key position to the appropriate fields on the form. For Crossovers on the File Field Descriptions window, refer to the *JD Edwards World Computer Aided Software Engineering Guide*.
- For details on the Data Dictionary Repository form, the Glossary form, and the Cross Reference options on the File Field Description form, refer to the *Technical Foundations Manual*.

2. Enter 4 in the option field. The program returns the field description to the associated field as shown in this example.

Figure 37–5 Crossover Rules screen (with Field Description in Associated Field)

0031		Crossover Rules									
Action Code	I										
Form Id.	P00120	From File	F4001Z								
Version.	0001										
To File Name	F4011Z										
Skip to	From	To.									
From File		To File									
Field	T	Begin	... Field ...	Field	T	Begin	... Field ...	O			
Name	Pos	Bytes	Dig	Dec	Name	Pos	Bytes	Dig	Dec		
**FILLER	A	1	1	00	00	SZACCM	A	00004	00001	00	00
**FILLER	A	1	1	00	00	SZAEYP	P	591	8	15	02
**FILLER	A	1	1	00	00	SZAIID	A	1032	8	00	00
**FILLER	A	1	1	00	00	SZAIISL	A	1131	8	00	00
**FILLER	A	1	1	00	00	SZAITM	A	316	25	00	00
**FILLER	A	1	1	00	00	SZANI	A	1010	22	00	00
**FILLER	A	1	1	00	00	SZAOEN	P	601	8	15	02
**FILLER	A	1	1	00	00	SZAPTS	A	755	1	00	00
**FILLER	A	1	1	00	00	SZATXT	A	750	1	00	00
**FILLER	A	1	1	00	00	SZBIN	A	1132	8	00	00
**FILLER	A	1	1	00	00	SZCADC	P	685	4	07	03
**FILLER	A	1	1	00	00	SZCDD	A	756	15	00	00
Opt: 9=Del F4=Del1 F6=Add F8=From Fill F9=To Fill F13=File F14=Text											

37.3 Adding Fields

To add a field

1. Press F6 to open the Add Crossover Instructions form.

Figure 37–6 Add Crossover Instructions screen

00312 Add Crossover Instructions	
From File . . .	P4001Z
Field Name . . .	
Field Data Type . .	
Field Begin Pos. . .	
Number of Bytes . .	
Number of Digits . .	
Field Dec Pos. . .	
Field Description . .	
Conversion Rule . .	
To File . . .	P4011Z
Field Name . . .	
Field Data Type . .	
Field Begin Pos. . .	
Number of Bytes . .	
Number of Digits . .	
Field Dec Pos. . .	
Field Description . .	
Conversion Rule . .	
F3=Exit	

This window presents most of the fields on the Crossover Rules screen.

2. With the cursor in the Field Name field on the Crossover Rules screen, press F13 to open the File Field Descriptions form.
3. Select a field using the 4 option.
4. Press Enter.

The program returns the field information to the Field Name when you exit the form.

The required fields for adding a field are:

- From field name, type, number of bytes, and beginning position

- To field name, type, number of bytes, and beginning position

The add function is available to associate a single field in the From file with multiple fields in the To file and to break apart a From field into multiple fields.

A field can exist in the To file and have nothing associated with it in the From file. In this case, the To file field is initialized as described in the section "[Special Processing](#)".

37.4 Deleting Records

To delete a record

Choose option 9 to delete records from the Crossover Rules file.

This cancels the From -To relationship so that no conversion takes place.

If you blank out the To file field name, the program does not delete the record from the Crossover Rules file, but only clears the To file field information. The converter program looks only at records that have both a From and To file field name.

Note: You do not need to delete lines with blank (**FILLER) To file field names, they are automatically skipped in the conversion process.

37.5 Keywords

Keywords in the Conversion Rule field (in the fold area) trigger special processing for a field before the data is transferred. Following are the keywords that are available and a brief explanation of what processing they trigger.

Caution: With the exception of the date keywords listed below, specify conversion rules for either From field or To field, never for both.

Keyword	Description
Dates - *MDY, *DMY, *YMD, *JUL, *SYSVAL	These keywords activate a date conversion between the From file field and the To file field. You must type keywords into both the From file Conversion Rule field and the To file Conversion Rule field. Each keyword on the From field specifies how the field is stored in the From file. The keyword on the To field conveys the output format on the To field. Note: This does not work on packed fields.
Business Unit - *RAB.	This keyword activates the business unit scrub of right adjust and blank fill to the From file field before moving it to the To field.
Initialize - *ZEROES, *BLANKS	These keywords move either zeroes or blanks to the From file field before it is transferred. With the initialization rules, these keywords are not required unless you want to initialize an alphanumeric field to zeroes.
Data Dictionary Default - *DEF	This keyword retrieves the Data Dictionary default for the To file field, using the Reference field in the Data Dictionary, and loads it to the From file field before it is transferred.

Keyword	Description
User Defined Code - *UDCssrr	This keyword retrieves the definition of the user defined code used in a specific system and loads it to the To field. When typing your request, ssss is the system and rr is the user defined code.
Default Constant - *DFTccccc	This keyword loads a default constant to the To field. When typing your request, ccccc is the default constant.
Next Number - *NNssssxx.	This keyword computes a next number and loads it to the To field. When typing your request, ssss is the system and xx is the bucket number.
Check Data Dictionary - *CHK.	This keyword lets you edit a field against Data Dictionary values and ranges. The results of the edit print on the File Conversion report whenever any errors are detected.

37.6 About the Conversion Rule Program

Besides specifying the use of keywords in the conversion rule, you can specify an external program that runs before the data is transferred to the To file field. You must name the external program beginning with an X. For example, use an "X" program to determine a range of valid values in a From file field, excluding records based on a given field. Other examples include writing multiple To file records based on a single From file record, or manipulating the data before it is transferred.

The external program requires five parameters:

PARAM	Description
First parameter	Must be 50 bytes and contains the value of the field being processed. Use it to send the value to the converter program and receive the value when the "X" program is done with it.
Second parameter	One-byte error flag. If the error flag returns blank, the data in parameter 1 from the "X" program is placed in the To file. <ul style="list-style-type: none"> ■ If the error flag returns with 2, the data in parameter 1 is not transferred to the To file. Use this error if you are writing multiple To file records and different From file fields are used for a single field in the To file. ■ If the error flag returns with 3, a record will not be written to the To file. Use this error if you do not want to write a record when the value of a certain field in parameter 1 is blank, zero, or not valid for your purposes.
Third parameter	Four-byte alphanumeric field for the number of the To file records. The field always has numeric characters and is zero-filled. This lets your "X" program know which record the converter program will write when you are writing multiple To file records.
Fourth parameter	Ten-byte field for the From file field name. This lets your "X" program know which field you are processing if multiple fields in the From file are updating a single To file field.
Fifth parameter	Ten-byte field for the To file field name. This lets your "X" program know which field you are processing if multiple fields in the From file are updating a single To file field.

37.7 Available Functions and Options

Function	Description
F6	Add Instructions To add fields to be converted, press F6 to access the Add Cross Over Instructions Form. The required fields for adding a field are Field Name, Field Data Type, Field Beginning Position, and Number of Bytes.

Figure 37–7 Crossover Rules screen

The screenshot shows a terminal window titled "Crossover Rules". It contains two main sections: "Add Cross Over Instructions" and "From File". The "Add Cross Over Instructions" section has fields for Field Name, Field Data Type, Field Begin Pos., Number of Bytes, Number of Digits, Field Dec Pos., Field Description, and Conversion Rule. The "From File" section has fields for Field Name, Field Data Type, Field Begin Pos., Number of Bytes, Number of Digits, Field Dec Pos., Field Description, and Conversion Rule. There are also fields for "To File" and "Field Dec Pos.". The screen is divided into two columns by a vertical line. The left column contains the "From File" and "To File" sections. The right column contains the "Add Cross Over Instructions" section. At the bottom, there is a prompt "OPT:" and a key "F3=Exit".

Function	Description
F8	Suppress From **FILLER Fields Will not display those lines with **FILLER values in the From field.
F9	Suppress To **FILLER Fields Will not display those lines with **FILLER values in the To field.
F13	File Field Description Place cursor on any Field Name field and press F13 to display the File Field Description form.
F14	User Defined Text Highlight to indicate that there is generic text associated with this field. <ul style="list-style-type: none">Press F14 in the top area of the form to enter text about the conversion.Press F14 in the From Field area (left side of the form) to enter text describing the From Field.Press F14 in the To Field area (right side of the form) to obtain text describing the To Field. The field will highlight to indicate that there is generic text associated with this field.

Option 9 - Delete Records

To delete records so that no conversion takes place, enter Option 9. If you blank out the To File Field Name, the program does not delete the record from the Cross Over Rules

file (F0031), but only clears the To File Field information. The converter program will only look at records that have both a from and to file field name.

Work with File Conversion

This chapter contains these topics:

- [Section 38.1, "Working with File Conversion"](#)

38.1 Working with File Conversion

The File Conversion program accesses the Crossover Rules file (F0031) and transfers data fields from one file to another, from one file to multiple files, or from multiple files to one file.

To run file conversion

1. From the Universal File Converter menu (G9841), choose File Conversion.

Figure 38-1 Universal File Converter Menu screen

```
G9841                                J.D. Edwards & Company
                                     Universal File Converter

... DATA FILE CONVERSION
 2. Version Setup
 3. Crossover Rules
 4. File Conversion
 5. Report

Selection or command
***> _____
```

Note: When creating an execution form, be sure the Based on File and the Format Name fields on the Additional Parameters screen contain your Based-on filename and the correct Format name for that file. The Data selection and sequence records should be left as-is since the converter reads the entire from file.

2. Add your own version from a Demo version and go to the processing options of your new version.

Figure 38–2 Processing Options Revision screen (file spec 1 and 2)

```

98312                Processing Options Revisions  Form ID. . . . P00111
Execute File Conversion - Sample                    Version. . . . APCS

This job has various options described below. Enter the desired values and
press ENTER to continue.

FILE SPECIFICATION:
1. Enter the name of the Form ID and
   version containing the conversion
   specifications.
      Form ID          P00120
      Version          APCS

2. Enter the name and library of the
   "from" file, if different than the
   Form ID and version containing the
   conversion specifications.
      From File Name
      From File library
** Caution - file must be the same field
format as file used to generate rules.

F5=Printer Overrides

```

Option	Description
Enter the name of the Form ID and version containing the Initial Setup step.	The Form ID will be P00120. Enter your version from the conversion specifications.
Enter the name and library of "from" file, if different than the Form ID and version specified.	Type the name of the From file and library, if it is different than the From file and library in the Form ID and version specified above. This file must have the same organization as the file used in the crossover rules.

Figure 38–3 Processing Options Revisions screen (file spec 3 and 4)

```

98312                Processing Options Revisions  Form ID. . . . P00111
Execute File Conversion - Sample                    Version. . . . APCS

This job has various options described below. Enter the desired values and
press ENTER to continue.

3. Enter the name of the file OR files
   to convert the data to. Leave blank
   to convert all files in setup
   specifications.
      File 1          _____
      File 2          _____
      File 3          _____
      File 4          _____

4. Enter the library the "to" files are
   in. If left blank, the library list
   will be searched for the "to" files.
      _____

F5=Printer Overrides

```

Option	Description
Enter the name of the file OR files to convert the data to.	Type the names of the To files. Up to four files can be specified. If these fields are left blank, all files entered in the setup version are converted. The files must have the same organization as the file used in the crossover rules.
Enter the library the to files are in.	Type the name of the library containing the To files, or leave blank to have the library list searched.

Figure 38–4 Processing Options Revisions screen (file spec 5 and 6)

```

98312                Processing Options Revisions  Form ID. . . . P00111
Execute File Conversion - Sample                    Version. . . . APCS

This job has various options described below. Enter the desired values and
press ENTER to continue.

File Preparation:
5. Enter a '1' to clear the file data               _____
   is being transferred to.

TO FILE FORMAT:
6. Enter the number of "to" file
   records to be created for each
   "from" file record. If left blank,
   a single "to" file record will be
   created for each "from" file record.
   File 1 _____
   File 2 _____
   File 3 _____
   File 4 _____
                                     Bottom _____
                                     PS=Printer Overrides

```

Option	Description
Enter a "1" to clear the file data is being transferred to.	Enter "1" to clear the To file. The To file will be filled only with converted records. If this field is left blank, the converted data records are added to the To file.
Enter the number of to file records to be created for each from file record.	Enter the number of To file records you want to create for each From file record. If this field is left blank, only a single To file record will be created for each From file record.

3. Enter the correct values on Processing Options and submit your version to complete the conversion process.

38.1.1 What You Should Know About

Topic	Description
Multiple "From" files	If you are using multiple From files, remember to create a join logical over all the From files you want to use.
New versions	When adding a new version, check to see that the format name for the based-on file is correct for the file. The default is Ixxxx and may not be appropriate.
"From" file name and the "To" file formats	The From file name and the To file formats should be the same as used to set up the conversion rules in Step 1.
Error conditions	A printed report lists error conditions detected by *CHK keyword and lists the total number of records read and number of records converted. The report lists the description of the errors. Depending on the error condition, you may need to correct the values in the incoming data and rerun the conversion.

38.1.2 Troubleshooting

Problem	Explanation / Resolution
Incorrect Value in the Format Name field.	<p>The most common UFC error is an incorrect value in the Format Name field on the Additional Parameters screen for P00111. The Format Name is for the Based On File (the from file).</p> <p>To verify the format name do a DSPFD on the from file. The file format is listed at the bottom of the display.</p> <p>Always exit the version and re-inquire on the Additional Parameters to verify that the Format Name change was accepted.</p>
Not writing to the output file	<p>Problems writing to output file (in P00111) may be because of duplicate keys.</p> <ul style="list-style-type: none"> ■ Check if the to file has a logical attached that has a unique key and verify the user is not populating that field with blanks. ■ The File Output Type field on the Additional Parameters screen for P00111 DREAM Writer should be a 2 (logical). Use a file output type of a 1 (OPNQRYP) for files that contain DDS (JD Edwards World files). If one type does not work, try the other. ■ Data Definition Specifications (DDS) means the file is formatted (the lengths of the fields in the record are defined). Files used in UFC do not have to be formatted (contain DDS) but they must be orderly (all fields in each record must be in the same place.) Use DSPPFM to see the data in each record. Use F10, F11 to see the hexadecimal value and the ASCII value. ■ If all setup options look correct check for multiple F0031 files - you may be executing out of the wrong Crossover Rules file. The data in this file is created when running the first DREAM Writer, P00120 (2/G9841).
Job log "version for P00111 cannot be found"	<p>If you receive a job log after running P00111 that states the version for P00111 cannot be found, check that only one set of DREAM Writer files exist in your library list. Otherwise unpredictable results may occur.</p>

- Section 39.1, "Printing a Report"

You can print a report that displays the Cross Over Rules and any associated generic text.

1. From the Universal File Converter Menu (G9841), choose Report.

[illegible]

2. On the Data Selection form, specify your Form ID and version.

Figure 39-2 Processing Options Revisions screen

98312

Processing Options Revisions

Form ID. . . . P0031P1

File Converter Report

Version. . . . 0001

This job has various options described below. Enter the desired values and press ENTER to continue.

1) Enter a "1" to print Data Dictionary Glossary for each item. Leave blank to not Print the Data Dict. Glossary. (Prints for "TO" fields only)

1

2) Enter a "1" to print File Specific Glossary for each data item. Leave blank to not print. (Prints for "TO" fields only)

1

3) Enter a "1" to print the Generic Text Instructions for each data item. Leave blank to not print the Generic Text. (Prints for both "FROM" and "TO" fields)

1

PS=Printer Overrides

*

3. Select one of the following print options:

Field	Explanation
Enter a "1" to print Data Dictionary Glossary for each item.	Prints Data Dictionary Glossary for each To field.
Enter "1" to print File Specific Glossary for each item.	Prints file specific glossary from Generic Text file (F00163) for each To file.
Enter "1" to print generic text instructions for each item	Prints any generic text associated with either To fields or From fields.

Create Conversion Versions

This chapter contains these topics:

- [Section 40.1, "Creating Conversion Versions"](#)
- [Section 40.2, "Creating Conversion Forms"](#)

40.1 Creating Conversion Versions

Universal File Converter enables you to create conversion forms to use for planning purposes when you convert your non-JD Edwards World files into JD Edwards World files.

- Start by creating a form that specifies the major file in the "Convert to" file. The name of the file you convert from is intentionally left blank. This lets you create a blank set of conversion rules which you can print using the Report selection.
- JD Edwards World supplies a special Data Dictionary glossary relating to specific fields in specific files in your JD Edwards World Data Dictionary text. You can also create new field descriptions that better correspond to your system by pressing F14 for generic text in the crossover rules revisions.
- If you decide to use the blank version (described above) for actual file conversion, type the From file specifications corresponding to the appropriate To field using the Crossover Rules. Be sure to override the From file before you execute the conversion program.

40.2 Creating Conversion Forms

To create a conversion form

1. From Universal File Converter (G9841), choose either Versions Setup or Report.

Figure 40–1 Processing Options Revisions screen, Generate Cross Over Instructions area

```

98312                Processing Options Revisions  Form ID. . . . P00120
Generate Cross Over Instruction - Sample          Version. . . . XJDE0001
                                                Display Level. 2

This job has various options described below. Enter the desired values and
press ENTER to continue.

FILE SPECIFICATION:
1. Enter the name of the file to
   convert the data from.                      _____
   JDE File?                                  _____
2. Enter the name of the file OR files
   to convert the data to.                      _____
   File 1                                     F92801U
   JDE File?                                  Y
   File 2                                     _____
   JDE File?                                  _____
   File 3                                     _____
   JDE File?                                  _____
   File 4                                     _____
   JDE File?                                  _____
                                                +

FS=Printer Overrides

```

2. Complete the Processing Options Revisions form.
 - If you selected Versions Setup, be sure to leave the first processing option blank under File Conversion.
 - In the second option, type the name of the files you want to convert, and then Y if they are JD Edwards World files or N if they are not.

Figure 40–2 Processing Options Revisions screen, File Converter Report area

```

98312                Processing Options Revisions  Form ID. . . . P0031P1
File Converter Report                          Version. . . . XJDE0001
                                                Display Level. 2

This job has various options described below. Enter the desired values and
press ENTER to continue.

1) Enter a "1" to print Data Dictionary
   Glossary for each item. Leave blank
   to not print the Data Dict. Glossary.
   (Prints for "TO" fields only)                1
2) Enter a "1" to print File Specific
   Glossary for each data item. Leave
   blank to not print. (Prints for "TO"
   fields only)                                1
3) Enter a "1" to print the Generic
   Text Instructions for each data item.
   Leave blank to not print the Generic
   Text. (Prints for both "FROM" and
   "TO" fields)                                1
                                                Bottom
                                                +

FS=Printer Overrides

```

If you select Report, type 1 next to all three options as shown above.

Work with the Data Dictionary Glossary by File

This chapter contains these topics:

- [Section 41.1, "About Working with the Data Dictionary Glossary by File"](#)
- [Section 41.2, "Accessing the Data Dictionary Glossary by File"](#)
- [Section 41.3, "Adding a File Specific Glossary Item"](#)
- [Section 41.4, "Printing the Data Dictionary Glossary Information"](#)

41.1 About Working with the Data Dictionary Glossary by File

When using the Universal File Converter, small details often differ for each file. Keeping these details clear, especially when the conversion form might be used by another department, is a potential problem. To remedy this, JD Edwards World has made it possible to attach Data Dictionary glossary text to each data item that explains the details particular to that specific file.

To work with the Data Dictionary Glossary by file perform the following tasks:

- [Section 41.2, "Accessing the Data Dictionary Glossary by File"](#)
- [Section 41.3, "Adding a File Specific Glossary Item"](#)
- [Section 41.4, "Printing the Data Dictionary Glossary Information"](#)

41.2 Accessing the Data Dictionary Glossary by File

To access the Data Dictionary Glossary by file

1. From Universal File Converter (G9841), type DD on the command line and press Enter.

The Data Dictionary Repository screen displays.

Figure 41–1 Data Dictionary screen

```

9201          Data Dictionary          Rls Last Chg A61
Action Code. . . . . I                Item Parent.
Data Item. . . . . MCU
Glossary Group . . . D

----- General Information -----
Alpha Desc . . . . Business Unit
Reporting System . 09
System Code. . . . 09      Type : A Size : 12      Data File Decimals
Data Item Class. . COSTCTRESC      Item Occurrences      Display Decimals

----- Descriptions -----
Row Description. . Business Unit
Column Title . . . Business
                  Unit

----- Default and Display/Edit Rules -----
Default Value. . .
Data Display Rules *EAB Justify. _
Data Edit Rules. . SERVER X0006

Search Program . .
Next Nbr System. . Next Number Index . .

F4=Search F8=UDC F9=Prev F10=Glossary F11=Descriptions F15=Where Used

```

- Press F10 to display the glossary definition of the data item you selected.

Figure 41–2 Data Item Glossary Revisions screen

```

92001          Data Item Glossary Revisions  Language
Action Code. . . . . I                      Applic Override
Data Item. . . . . MCU                      Scrn/Rpt . F4102
System Code. . . . . 09      Desc Business Unit
Glossary Group . . . D      Reporting System Code. 09

Identifies a separate entity within a business for which you wish to track
costs, for example, a warehouse location, job, project, work center, or
branch/plant. The business unit field is alphanumeric.

You can assign a business unit to a voucher, invoice, fixed asset, and so forth,
for responsibility reporting. The system provides reports of open A/P and A/R
by business units, for example, to track equipment by responsible department.

Business Unit security can prevent you from inquiring on business units for which
you have no authority.

In the Inventory Management System, MCU represents a branch or plant

F4=Search F9=Redisplay Prev F19/F20=Prev/Next Item F24=More

```

- Use the Data Item Glossary Revisions form to change the glossary text for a Data Dictionary item or to add a File-Specific glossary item, as needed.

41.3 Adding a File Specific Glossary Item

To add a File Specific Glossary item

From the Data Item Glossary Revisions form

- Type A in the Action Code field.
- Type the file name in the Scrn/Rpt field.
- Type the new text and press Enter.

Figure 41-3 Processing Options Revisions screen

98312	Processing Options Revisions	Form ID. . . . P0031P1
File Converter Report		Version. . . . XJDE0001
		Display Level. 2

This job has various options described below. Enter the desired values and press ENTER to continue.

1) Enter a "1" to print Data Dictionary Glossary for each item. Leave blank to not print the Data Dict. Glossary. (Prints for "TO" fields only)	1
2) Enter a "1" to print File Specific Glossary for each data item. Leave blank to not print. (Prints for "TO" fields only)	1
3) Enter a "1" to print the Generic Text Instructions for each data item. Leave blank to not print the Generic Text. (Prints for both "FROM" and "TO" fields)	1

Bottom *

F5-Printer Overrides

41.4 Printing the Data Dictionary Glossary Information

To print the Data Dictionary Glossary information

1. From Universal File Converter (G9841), choose Report.
2. Complete the Processing Options Revisions form.
3. Type 1 next to all three options to print the Data Dictionary glossary.
4. Use Option 2 to print the File-Specific glossary text.

Common & Production Library Files

This appendix lists the files that are automatically created in the common and production libraries during the installation process.

Common Library Files Automatically Created by JD Edwards World Build Programs

The following chart lists files automatically generated from the Data Dictionary as a result of a build program that JD Edwards World offers from a menu. It is recommended that these files be maintained in your common library along with the Data Dictionary.

File Name	File Description	System Code
F98FRF@	Field Reference - "@" Data Items	98
F98FRF\$	Field Reference - "\$" Data Items	98
F98FRFA thru	Field Reference - "A" Data Items through	98
F98FRFZ	Field Reference - "Z" Data Items	98

Physical and Logical Files Created in a Common Library

On the SVR screen, there are two fields which govern the location and content of data files in user libraries during an install.

- The first field is Common File. If a file has this field set to "Y", the file will be created in the user's Common library, if one is specified.
- The second field is Copy Data (Y/N). Most files to be located in the Common library will have Copy Data Y but there are some exceptions such as F0016. Most non-Common (User data) files will be Copy Data N but there are exceptions such as F0010 and F0009. No data will be copied for a logical file.
- Inquire on a file in SVR to see if it should be located in Common or not.
- Inquire on a file in SVR to see if data from the pristine environment should be copied into it.

Upgrading Customized Source Code

This appendix contains these topics:

- [Section B.1, "S/Compare"](#)
- [Section B.2, "Harmonizer"](#)
- [Section B.3, "About Harmonizer Plus"](#)

JD Edwards World provides access to several complementary products. If you have customized JD Edwards World source code, the following products will help you upgrade your source code.

B.1 S/Compare

Overall, S/Compare is a valuable aid used to:

- Identify differences between any two programs
- Simplify the task of documenting program changes
- Simplify the task of consolidating your custom changes into new releases of programs
- Identify differences between the names of the programs in two different files to quickly locate added or deleted programs in the new release

The S/Compare utility is specifically designed to compare two versions of source code. It will locate inserted, deleted, changed, or moved records in a source program. Processing options are provided to include or exclude comment lines, blank lines, and formatting differences. S/Compare's output clearly identifies differences between two source members on a composite list of both programs. An option allows the records that are the same in the programs to be omitted from the listing to produce a report of only the differences between the files. This option also allows a given number of matching records before and after a mismatch to be listed to help in identifying the section of source code.

B.1.1 Features of S/Compare

Some of the features and capabilities of S/Compare are:

- Flags are used in the composite listing to clearly mark statements or blocks of statements that have been inserted, deleted, or moved.
- Records that are moved from one location in the original file to another in the new program are indicated by source and target locations.

- Printing large blocks of identical code can be eliminated by a processing option. Only the differences will be printed and you can control the number of matching lines that are listed before and after each block of mismatched code.
- Differences between your program and the new program can be listed in an edit program.
- There is a processing option that can eliminate mismatches being printed because of spacing between words.

B.2 Harmonizer

Harmonizer adds to the capabilities of S/Compare by allowing the comparison of 3 to 16 program versions. Like S/Compare, the comparison results are written in a format that clearly depicts the differences between source members. In addition, Harmonizer has the capability of merging program versions to generate a composite source member. You can control what is written to the composite source member when potential conflicts are found.

B.2.1 Features and Capabilities of Harmonizer

Some of the features and capabilities of Harmonizer are:

- The comparison of 3 to 16 versions of a program.
- Two report formats are available. The MULTI-Compare report compares 3 to 16 programs. The TRI-Compare report is specifically designed for 3 programs.
- Statements from the original file that have been replaced, inserted, or deleted are noted on the comparison reports.
- All of the features of S/Compare are supported by Harmonizer when 3 programs are being compared, except the creation of an edit program which has been replaced by the creation a composite output program.
- The composite program may be compiled immediately or it may be edited. The ScmpEdit utility can be used to remove specified code in the composite program.
- The HARMONIZER command can be used to execute S/Compare and Harmonizer making the utilities easier to use.

B.2.2 Harmonizer Added to S/Compare

- You can incorporate your program changes into new releases easier. Harmonizer can compare the JD Edwards World original program, the JD Edwards World new release, and your customized program to produce a composite source file and a composite report. The composite report notifies you of discrepancies in the replacement, insertion, or deletion of code.
- The Source File Synopsis report produces a comparison of the program names in the JD Edwards World original source file, the JD Edwards World new source file, and your source file to determine any additions or deletions of programs.
- You can merge the development work of several programmers working on the same program.

B.3 About Harmonizer Plus

Harmonizer Plus adds to the capabilities of S/Compare and Harmonizer by helping you manage the ENTIRE process of building a new software release.

B.3.1 About the Project Manager Function

The Project Manager function will display an up-to-the-minute status of every program in your upgrade project. It shows:

- Which merged objects need a programmer review due to conflicts between local changes and vendor changes
- Modified objects that are already created and ones that need to be created
- Objects that are ready for production
- Unmodified objects that must be recreated because they are dependent on modified objects
- Objects that must be present before the object you are working with can be created

B.3.2 Additional Functions

Harmonizer Plus provides a workbench for programmers to perform a variety of functions. Given the proper authority, a programmer can:

- Directly access SEU for editing programs
- Mass compile entire groups of programs
- Selectively compile individual programs
- Selectively create all objects dependent on a modified object
- Add or delete programs from the new production version

Harmonizer Plus identifies unchanged modules that must be recompiled due to changes in prerequisite objects. For example, if you have modified DDS, Harmonizer Plus can identify programs that reference the related files. It can then recompile those programs. All you need to do is test and move the new libraries into production.

This appendix contains these topics:

- Section C.1, "J98MODEL1 - Interactive Video"
- Section C.2, "J98MODEL2 - Batch DREAM Writer without Printer File"
- Section C.3, "J98MODEL3 - Interactive Video Prompt"
- Section C.4, "J98MODEL4 - Interactive/Batch with Processing Options"
- Section C.5, "J98MODEL5 - Batch Report Writer - No DDS File"
- Section C.6, "J98MODEL6 - Batch Report Writer OPNQRYF"
- Section C.7, "J98MODEL7 - Batch Report Writer OPNQRYF w/OQF Reset"
- Section C.8, "J98MODEL8 - Control File Driven Batch Process"

C.1 J98MODEL1 - Interactive Video

Figure C-1 Software Versions Repository screen (description: interactive video)

```

9801                      Software Versions Repository
Action Code. . . I
Member ID. . . J98MODEL1
Description. . . Model CL Program - Interactive Video
Function Code. . CLP CL Programs
Function Use. . . 128 Model Source Member
System Code. . . 22 Technical Tools
Reporting System 22 Technical Tools
Base Member Name J98MODEL1 File Prefix. . .
Maint/RSTDSP. . Omit Option. . Q Generation Sev. .
Copy Data (Y/N). N Optional File. . N Common File. . N

O Source Object Source SAR Version S D User Date
P Library Library File Number ID C P ID Modified
-- JDFSRC73 JDFORJ73 JDESRC 981281 A73 1 BECK 07/07/95

Opt: 1-Browse 2-Edit 3-Copy 5-SAR 8-Print 9-Dlt 10-Design 14-Crt

```

C.2 J98MODEL2 - Batch DREAM Writer without Printer File

Figure C–2 Software Versions Repository screen (description: batch DREAM writer without printer file)

```

9801                               Software Versions Repository

Action Code. . . . I
Member ID. . . . J98MODEL2
Description. . . . Model CL Program - Batch DREAM Writer without Printer File
Function Code. . . . CLP   CL Programs
Function Use. . . . 128   Model Source Member
System Code. . . . 28    Technical Tools
Reporting System 28    Technical Tools
Base Member Name J98MODEL2
Maint/RSTDSP. . . . Omit Option. . . . Q   Generation Sev. . . .
Copy Data (Y/N). N   Optional File. . . . N   Common File. . . . N

O Source   Object   Source   SAR   Version   S D   User   Date
P Library  Library  File    Number  ID       C P   ID    Modified
-- JDFSRC73 JDFORJ73 JDESRC   867923 A73       1 - BECK 07/07/95

Opt: 1=Browse 2=Edit 3=Copy 5=SAR 8=Print 9=Dlt 10=Design 14=Crt

```

C.3 J98MODEL3 - Interactive Video Prompt

Figure C–3 Software Versions Repository screen (description: interactive video prompt)

```

9801                               Software Versions Repository

Action Code. . . . I
Member ID. . . . J98MODEL3
Description. . . . Model CL Program - Interactive Video Prompt
Function Code. . . . CLP   CL Programs
Function Use. . . . 128   Model Source Member
System Code. . . . 28    Technical Tools
Reporting System 28    Technical Tools
Base Member Name J98MODEL3
Maint/RSTDSP. . . . Omit Option. . . . Q   Generation Sev. . . .
Copy Data (Y/N). N   Optional File. . . . N   Common File. . . . N

O Source   Object   Source   SAR   Version   S D   User   Date
P Library  Library  File    Number  ID       C P   ID    Modified
-- JDFSRC73 JDFORJ73 JDESRC   867923 A73       1 - BECK 07/07/95

Opt: 1=Browse 2=Edit 3=Copy 5=SAR 8=Print 9=Dlt 10=Design 14=Crt

```

C.4 J98MODEL4 - Interactive/Batch with Processing Options

Figure C-4 Software Versions Repository screen (description: interactive/batch with processing options)

```

9801                               Software Versions Repository

Action Code. . . I
Member ID. . . J98MODEL4
Description. . . Model CL Program - Interactive/Batch with Processing Options
Function Code. . CLP   CL Programs
Function Use. . . 128   Model Source Member
System Code. . . 28    Technical Tools
Reporting System 28    Technical Tools
Base Member Name J98MODEL4
Maint/RSTDSP . . Omit Option. . . Q Generation Sev . .
Copy Data (Y/N). N Optional File. . N Common File. . . N

O Source   Object   Source   SAR   Version   S D   User   Date
P Library  Library  File     Number ID      C P   ID   Modified
-- JDFSRC73 JDFOBJ73 JDESRC   867923 A73      1 - BECK 07/07/95

Opt: 1=Browse 2=Edit 3=Copy 5=SAR 8=Print 9=Dlt 10=Design 14=Crt

```

C.5 J98MODEL5 - Batch Report Writer - No DDS File

Figure C-5 Software Versions Repository screen (description: batch report writer - no DDS file)

```

9801                               Software Versions Repository

Action Code. . . I
Member ID. . . J98MODEL5
Description. . . Model CL Program - Batch Report Writer - No DDS File
Function Code. . CLP   CL Programs
Function Use. . . 128   Model Source Member
System Code. . . 28    Technical Tools
Reporting System 28    Technical Tools
Base Member Name J98MODEL5
Maint/RSTDSP . . Omit Option. . . Q Generation Sev . .
Copy Data (Y/N). N Optional File. . N Common File. . . N

O Source   Object   Source   SAR   Version   S D   User   Date
P Library  Library  File     Number ID      C P   ID   Modified
-- JDFSRC73 JDFOBJ73 JDESRC   867923 A73      1 - BECK 07/07/95

Opt: 1=Browse 2=Edit 3=Copy 5=SAR 8=Print 9=Dlt 10=Design 14=Crt

```

C.6 J98MODEL6 - Batch Report Writer OPNQRYF

Figure C–6 Software Versions Repository screen (description: batch report writer OPNQRYF)

9801Software Versions Repository

Action Code. . . I

Member ID. . . J98MODEL6

Description. . . Model CL Program - Batch Report Writer OPNQRYF

Function Code. . . CLP CL Programs

Function Use. . . 128 Model Source Member

System Code. . . 28 Technical Tools

Reporting System 28 Technical Tools

Base Member Name J98MODEL6 File Prefix. . .

Maint/RSTDSP. . . Omit Option. . . Q Generation Sev. .

Copy Data (Y/N). N Optional File. . N Common File. . N

O	Source	Object	Source	SAR	Version	S	D	User	Date
P	Library	Library	File	Number	ID	C	P	ID	Modified
	JDESRCT3	JDEFORJ73	JDESRCT	867923	A73	1		BECK	07/07/95

Opt: 1=Browse 2=Edit 3=Copy 5=SAR 8=Print 9=Dlt 10=Design 14=Crt

C.7 J98MODEL7 - Batch Report Writer OPNQRYF w/OQF Reset

Figure C–7 Software Versions Repository screen (description: batch report writer OPNQRYF with OQF reset)

9801Software Versions Repository

Action Code. . . I

Member ID. . . J98MODEL7

Description. . . Model CL Program - Batch Report Writer OPNQRYF w/OQF Reset

Function Code. . . CLP CL Programs

Function Use. . . 128 Model Source Member

System Code. . . 28 Technical Tools

Reporting System 28 Technical Tools

Base Member Name J98MODEL7 File Prefix. . .

Maint/RSTDSP. . . Omit Option. . . Q Generation Sev. .

Copy Data (Y/N). N Optional File. . N Common File. . N

O	Source	Object	Source	SAR	Version	S	D	User	Date
P	Library	Library	File	Number	ID	C	P	ID	Modified
	JDESRCT3	JDEFORJ73	JDESRCT	867923	A73	1		BECK	07/07/95

Opt: 1=Browse 2=Edit 3=Copy 5=SAR 8=Print 9=Dlt 10=Design 14=Crt

C.8 J98MODEL8 - Control File Driven Batch Process

Figure C-8 Software Versions Repository screen (description: control file driven batch process)

9801Software Versions Repository

Action Code. . . I

Member ID. . . J98MODEL8

Description. . . Model CL Program - Control File Driven Batch Process

Function Code. . CLP CL Programs

Function Use. . . 128 Model Source Member

System Code. . . 98 Technical Tools

Reporting System 98 Technical Tools

Base Member Name J98MODEL8

Maint/RSTDSP. . . Omit Option. . . Q Generation Sev. . .

Copy Data (Y/N). N Optional File. . N Common File. . . N

File Prefix. . .

O	Source	Object	Source	SAR	Version	S	D	User	Date
P	Library	Library	File	Number	ID	C	P	ID	Modified
	JDFSRC73	JDFOBJ73	JDESRC	867923	A73	1		BECK	07/07/95

Opt: 1=Browse 2=Edit 3=Copy 5=SAR 8=Print 9=Dlt 10=Design 14=Crt

Universal File Converter

This chapter contains these topics:

- [Section D.1, "About Universal File Converter"](#)
- [Section D.2, "Sample Conversion"](#)

D.1 About Universal File Converter

This is a simple, single file to single file walk-through of the JD Edwards World Universal File Converter (UFC). A major benefit of using UFC is that once the process has been tested, it can be made into a production process using a Dream Writer version.

The UFC is written to map data character-by-character from any physical file resident on the System I (iSeries / AS400) to any other resident physical file. If the input file is from a PC spreadsheet, that file will have to be ported (FTP or other process) to the iSeries.

Caution: To protect your production data, create a test library and put a copy of the "from file" and the "to file" with its attached logicals into it. There may be a logical file attached to the "to file" with a "unique" key requirement. By having this file attached during the UFC process, all the key field requirements will be fulfilled.

D.2 Sample Conversion

There are 2 pieces of information to gather:

- The format name
- The number of records in the file

The record format name will be used in the last step. The number of records should be 100 or less for the initial testing. During testing, the number of records can be used to make sure all records were read. When the conversion has been tested successfully a full-file test can be made.

You will also:

- Identify from and to files
- Map data
- Convert data

To gather format names

1. Do a DSPFD on the "from file" in your test library.
2. Page down to the last panel.
3. Write down the Format name and the number of records in the file.

To identify from and to files

1. You will need to be signed on to JD Edwards World World. You must have an F0031 file in this environment. Go to menu G9841.
2. Selection 2 will take you to a versions list for P00120.
 - Make a copy of the XJDE0001 version. Use your version name and title to tie it to the data you are converting, for example ABCONV and "Address book conversion."
 - Do not make any changes on the Additional Parameters screen. The based on file should be *NONE and the Format name should be INONE.
 - On the processing Options screen, enter the "from" and "to" file names. If either file is set to JD Edwards World file = "Y", numeric field names will be looked up for decimal point information. Page down to enter the test library name.

Processing options three and four pertain to the library for test data.

- Upon returning to the Versions List, run your version. P00120 will find the "from" and "to" files and create a record in the F0031 for each field in these files. If P00120 has no print files after it runs, it was successful.

To map data

Selection 3 takes you into the crossover rules. This is where the mapping details are entered. P00120 is pre-loaded.

Inquire on the version name you created and ran in Step 2.

The program in Step 2 above attempts to match field names. Any field with no match will have **FILLER for a Field Name. If **FILLER is on either the "From" or "To" side, the data will not be mapped. If the "From" side has fewer **FILLER fields, do an F8 to remove them. If the "To" side has fewer, do an F9.

The remaining fields will be in alphabetical order, not by position within the record. UFC is usually used to bring data into a JD Edwards World file, so that assumption will be used in this exercise.

Pick a field on the "To" side that you want to map into. Start with the field name on the "From" side and key in a meaningful field name. Use F14 to enter additional documentation.

The system highlights Fields that have additional documentation.

Set the "From" field "type" to A for Alpha. This is the most inclusive data type and will be used for numeric fields as well.

You will need to know where the data to be mapped starts in the input record. UFC moves data character-by-character, so if the input data has leading spaces, increment the "Begin Pos" field to skip over them. Similarly, on the "To" side, manipulate the "Begin Pos" as necessary so the data will be mapped correctly. The field names are not important to the process. The type, position and length values are important.

On the "To" side, the type can be "A", "S", or "P" for Alpha, Signed or Packed. "A" fields will have the "Byte" field set to the length of the data and the "Dig" field should be 0. "S" fields should have the "Bytes" and "Dig" fields set to the same value. "P" fields should have the "Dig" set to $((\text{"Bytes"} \times 2) - 1)$. It takes 8 bytes to hold 15 packed digits. In most cases, the "Dec" field will be 00.

Open the fold with an F4. Do F1 on the "Conv Rule" field. The most used functions are the date formats, *DFT and *NN. Most file dates are stored in Julian format in JD Edwards World. The incoming data should be 6 digits long and will probably be in a *MDY or *DMY format. On the "To" side, the field will also be 6 digits long but will have the *JUL format. The *DFT rule has room for 6 contiguous digits of data. *NN uses the first four digits for system code and the next 2 for the bucket number.

When all the incoming fields with data have been mapped, put "C" in the action code and press enter. All fields in the "To" file will be initialized to the proper empty format if not mapped.

At the top of the screen, you can inquire with the name of an additional file that you're mapping data to. Go through the above steps to map the data.

F3 back to the menu.

To convert data

1. Selection 4 takes you to the versions list for P00111.
 - Copy version XJDE0001 and give it the same name and title as in Step 2a for continuity purposes.
 - On the Additional Parameters screen:
 - Enter the input file name in the Based on file field.
 - Press Enter.
 - Press F12 to return to the Additional Parameters screen and make sure the format name is the one from the DSPFD command in the preparation step.
 - Press Enter.
 - Processing option 1 needs the version of P00120 from step 2 so it can find the right crossover rule records in the F0031.
 - For options 2, 3, and 4, enter the appropriate file and library names.
 - Option 5 is usually set to 1 to clear the file so just the records from the latest conversion will be there.
 - Option 6 is usually blank.
 - Leave the data selection and sequencing screens alone. They are used for the OPNQRYF statement. Since we want to use the full file, they don't apply.
2. From the versions list, run your version.
 - There should be a R00111 in the spool files. At the bottom it will tell you how many records were read and written.
 - Do a DSPPFM on the "to" file to see if the mapping is correct. In order to see all the data, you may want to do F10 followed by F11 to see the hexadecimal representation of the data in an over/under presentation. There will be an "F" or "D" sign in the bottom row at the right hand end of a packed field. Read that data by reading backwards from the sign in an up and down manner.

D.2.1 Trouble Shooting

Steps to consider

Ensure that you did perform the following:

1. Set up and run step 2 on the menu 9841(P00120).
 - You should not change anything on the DW additional parameters.
 - You must enter the file and library names in the Proc Opt.
2. Map only the fields they want in the FROM and TO files on the crossover rules screen. **FILLER fields will be ignored and the fields will be created empty, either blanks or zeros.
3. Enter the correct format name for the based-on file(FROM) in the Additional parameters screen of the P00111 DW.
 - Check this with DSPFD of based-on file.
4. Try changing the file output type for P00111 from 1 to 2 or from 2 back to 1.

Note: Sometimes LF works, sometimes OPNQYF.

5. Check the output file with a DSPPFM to see if there are any records created.

Factors to consider

1. Current JD Edwards World release level
2. Additional factors for each step
 - If Step 1: Check the Additional Parameters for the Based On File to be *NONE and format INONE.
 - If Step 2: Check if the you ran the Dream Writer in Step 1 to ensure you are setting the action code to C when changing cross over rules.
 - If Step 3: Are you getting any records in the To file?
 - Yes: Check the cross over rules.
 - No: Use DSPFD on the from file to identify the format ID and verify the correct format is in the additional parameters of the conversion Dream Writer (P00111).

Note: If you are on release A7.1 or above and using *DFT in the cross over rules, you needs a paper fix.

- After making any changes to steps 2 or 3, rerun the conversion.

Additional items to consider

- The all time leader in UFC errors is an incorrect format name for the Based on (input) file on the Additional Parameters screen for P00111. Do a DSPFD on the From file and go to the bottom of the display to determine the format. Option 3 from G9841.

- Do not change anything in the additional parameters screen on the P00120 form. After entering the file names and libraries in the Processing options, you need to run the Dream Writer version. Option 1 from G9841.
- Problems writing to output file (in P00111) may be because of duplicate keys. Check if the To file has a logical attached that has a unique key and verify the user is not populating that field with blanks.
- File output type in P00111 Dream Writer additional parameters should be a 2 for logical: for some JD Edwards World file to JD Edwards World file conversions (DDS files), a 1 for OPNQRYF is necessary.
- There are many conversion rules in UFC to cover most situations, try them first before using custom Xxxxx programs.
- Use F6 to pull up full information about both fields on the Cross Over Rules screen.
- Use reference field in the fold area of cross over for those conversion rule entries that refer to the Data Dictionary.
- You need only map the fields that you are concerned with. If some fields are not being initialized correctly to *ZEROES or *BLANKS, you might have to find a one byte field of the right persuasion and move it into that field (longer length will be accommodated) or use *DFT.
- The UFC does a character at a time move of the data from the input file data location into the output file data location. For this reason it is not suited to large, repeated data transfers. It is suited to one time data file conversions or small scale frequent data import situations.
- When using *DFT if the literal is over 6 positions then part it out as if dealing with two fields.
- When having problems with going from zoned or signed to a packed field, call it alpha to packed forcing UFC to go through the C0012 to edit the data.
- When having problems with going from packed to alpha, try packed to signed.
- When having problems with alpha to signed, try alpha to alpha.
- *If all looks correct, check for multiple F0031 files, you may be executing out of the wrong cross over rules.
- If you get a duplicate key message in the joblog, it is because there is a unique key on the physical or logical. You may not be populating one of the fields in the key and this may create the problem.
- Set most of the FROM fields to type A for alpha.
 - Numeric TO fields can be P for packed or S for signed.
- Sometimes P00111 will have problems with the input file.
 - On the Add'l parameters screen, if the file output type is 1, change it to 2 and vice versa.
- Make sure the P00111 based-on file and format names are correct. See Step 4(b).
- There may be just one record in the "to file" and a message in the Joblog about a duplicate record.
 - Do a DSPFD on the file and its logicals to see which one has the "unique" key requirement. You will need to map data to each of the key fields. If there is no

matching data, maybe a *NN conversion rule will have to be attached to one of the key fields as a tie breaker.

This chapter contains these topics:

- [Section E.1, "About Date Programs"](#)
- [Section E.2, "X0027"](#)
- [Section E.3, "X0028"](#)
- [Section E.4, "X0035"](#)
- [Section E.5, "X98DAY"](#)

E.1 About Date Programs

JD Edwards World uses four key RPG programs to work with dates in the system.

- X0027 is used to calculate a new date from a reference date.
- X0028 is the primary date formatting program which converts dates from Julian to Gregorian or Gregorian to Julian.
- X0035 determines the difference in days between two dates or can calculate the second date given one date and the difference in days
- X98DAY determines the day of the week and the day and month names for a given date.

E.1.1 Date Formats

Julian Format

The JD Edwards World Julian (*JUL) format is CYYDDD where:

- C is the value added to 19 to create the century (0=>19, 1=>20).
- YY is the year within the century.
- DDD is the day in the year which can range from 001 to 731(next year).

For Example:

- 098185 is July 4, 1998
- 100001 is Jan 1, 2000
- 099666 is Oct 27, 2000

Gregorian Formats

The JD Edwards World Gregorian formats are *MDY, *DMY, and *YMD where:

- M represents the 2 character month
- D represents the 2 character day
- Y represents the 2 or 4 character year

Note: Edited means punctuation such as: 12/31/98, 22.11.45, or 2000-01-01.

E.2 X0027

X0027 is an RPG program the system uses to calculate a new date from a reference date including *TODAY. The interval can be + or -, the unit can be *DAY, *WEEK, *MONTH, or *YEAR.

The information here is intended to cover the usual usage of this program. The source code has samples and more documentation. Specifically, *FORMULA is used to pass a string like "*TODAY + 1".

E.2.1 Using X0027

The reference date must be scrubbed (usually copy module C0012) before being passed to X0027. X0027 calls x0028 which uses the Data Dictionary item #CYR to establish the last year of the floating 100-year business window. See the X0028.

#CYR DD default	Digits entered = (*MDY)	Julian date = CYYDDD	IBM QRY = (no leading 0's)
10	01/01/10	110001 (2010)	110,001
10	12/31/11	011365 (1911)	11,365
30	07/29/55	055241 (1955)	55,241
60	07/29/55	155241 (2055)	155,241
98	09/14/98	198257 (2098)!	198,257
97	09/14/98	098257 (1998)	98,257

E.2.2 Parameters

The parameters to pass to X0027 are ALL type Alpha. If the calling program is written in CL, be sure the variables are *CHAR.

The first parameter will accept a 4 digit year, for example 01011999(MMDCCYY).

You must pass the first 8 parameters. If you want the day of the week and that day name, pass 10 parameters.

Parameter	Description
\$SIDAT	\$SIDAT is a 25 character field which can be any format as long as it agrees with the From format. To fetch today's date use *TODAY (+/- optional) and use *FORMULA in \$FFMT.
\$CENT	\$CENT is a 2 character field which should be sent blank.
\$FFMT	\$FFMT is an 8 character field describing the FROM format. The usual values will be *JUL, *MDY, *DMY, *YMD, *SYSVAL or *FORMULA. See the program code for other allowed values.

Parameter	Description
\$OFFSET	\$OFFSET is the 6 character number (+/-) of the units you have chosen in parameter 5.
\$INTVL	\$INTVL is the 8 character calendar unit used to calculate the number of days. The usual values are *DAY, *WEEK, *MONTH or *YEAR. See the program code for other allowed values.
\$SODAT	\$SODAT is a 6 character field which will contain the output date. This date will need to be passed to X0028 for any editing. It should be sent blank.
\$TFMT	\$TFMT is an 8 character field describing the TO format. The usual values will be *JUL, *MDY, *DMY, *YMD, or *SYSVAL. See the program code for other allowed values.
RTNCDE	RTNCDE is a single character error code. A '1' will be placed in this in this field if X0027 receives an invalid parameter. Your program should check this field right after the call to X0027.
\$DAY# (Optional)	\$DAY# is a one character field for the day name, 1 = Sunday, 2 = Monday, and so on.
\$DAY\$ (Optional)	\$DAY\$ is a ten character field which, if it is sent, will have the day name loaded.

E.3 X0028

X0028 is the primary JD Edwards World date formatting program. Briefly, it is an RPG program which converts dates from Julian to Gregorian or Gregorian to Julian. It will do some editing, but that is not its purpose. This program will NOT convert edited dates to unedited.

E.3.1 Using X0028

The edited date must be scrubbed (usually copy module C0012) before being passed to X0028. The Data Dictionary item that X0028 uses is #CYR. It establishes the last year of the floating 100-year business window.

#CYR DD default	Digits entered = (*MDY)	Julian date = CYYDDD	IBM QRY = (no leading 0's)
10	01/01/10	110001 (2010)	110,001
10	12/31/11	011365 (1911)	11,365
30	07/29/55	055241 (1955)	55,241
60	07/29/55	155241 (2055)	155,241
98	09/14/98	198257 (2098)!	198,257
97	09/14/98	098257 (1998)	98,257

If the 2 digits for the year are less than or equal to #CYR, a 1 will be placed in the Julian century field so that when it is added to 19, a century of 20 will result.

Caution: Setting #CYR to 60 so that your business will go from 1961 to 2060 means entering a date of birth for 07/29/55 will be converted to 2055. Setting #CYR to 98 means you have a range from 1999 to 2098. Think about it!

In the prior paragraph, the stored Julian values were shown. Once the data has been stored in the file, no comparison or decision is necessary. The value of the century digit is added to 19 and the rest of the data will be used to compute the day and month. Remember, when displaying a file with QRY, the leading zero will not be displayed. DSPPFM will show you all the digits.

E.3.2 Parameters

The parameters to pass to X0028 are ALL type Alpha. If the calling program is written in CL, be sure the variables are *CHAR.

If you do not need 4 position years, pass the first 6 parameters. If you need a 4 position year, pass all 10 or 11 parameters.

Parameter	Description
\$SIDAT	\$SIDAT is a 6 character field which can be any format as long as it agrees with the From format field and has only digits from 0-9 or is all zeros. X0028 moves the converted unedited date back into this field.
#EDAT	#EDAT is the 8 character edited field. It has two extra positions to allow for the #SEP characters inserted by X0028. It will have the format specified by #TFMT. X0028 blanks this field upon receipt.
#FFMT	#FFMT is a 7 character field describing the FROM format. It can be *SYSVAL, *JUL, *MDY, *DMY, or *YMD.
#TFMT	#TFMT a 7 character field describing the TO format. It can be *SYSVAL, *JUL, *MDY, *DMY, or *YMD.
#SEP	#SEP is a 7 character field for the separator character to be used in editing the date. It can be *SYSVAL, *NONE, blank or a single editing character like '-', '/' or '.'.
\$ERTST	\$ERTST is a single character error code. A '1' will be placed in this in this field if X0028 receives an invalid date or invalid data. Your program should check this field right after the call to X0028.
\$CTRY (Optional)	\$CTRY is a two character field which will contain the century, 19 or 20. It should be sent with blanks.
#FJPN (Optional)	#FJPN is a one character field used for Japanese Era dates.
#TJPN (Optional)	#TJPN is a one character field used for Japanese Era dates.
#EDAT2	#EDAT2 is a 10 character field used for edited dates with 4 digits for the year. You MUST use this parameter if you want a 4 digit year date. It has two extra positions to allow for the #SEP characters inserted by X0028. It will have the format specified by #TFMT.
#SIDT2	#SIDT2 is an optional 8 character field intended for use with 4 digit year dates. It can be any format as long as it agrees with the From format field and has only digits from 0-9. If this parameter is used and the from format is Julian, the Julian date needs to be loaded here with 2 leading zeros and #SIDAT should be loaded with zeros. X0028 moves the converted unedited date back into this field as well as #SIDAT.

E.4 X0035

X0035 is an RPG program which determines the difference in days between two dates or can calculate the second date given one date and the difference in days. It uses X0028 for date conversion.

E.4.1 Using X0035

The Data Dictionary item that X0028 uses is #CYR. It establishes the last year of the floating 100-year business window. See X0028.

E.4.2 Parameters

The parameters to pass to X0035 are ALL type Alpha. If the calling program is written in CL, be sure the variables are *CHAR.

Parameter	Description
#SIDA1	#SIDA1 is a 6 character date field which can be any format as long as it agrees with the #SIFM1 format and has only digits from 0-9. It can be sent as blanks if a reverse date is to be calculated from #SIDA2.
#SIDA2	#SIDA2 is a 6 character date field which can be any format as long as it agrees with the #SIFM2 format and has only digits from 0-9. It can be sent as blanks if a forward date is to be calculated from #SIDA1.
#SIFM1	#SIFM1 is a 7 character field describing the #SIDA1 format. It can be *SYSVAL, *JUL, *MDY, *DMY, or *YMD.
#SIFM2	#SIFM2 is a 7 character field describing the #SIDA2 format. It can be *SYSVAL, *JUL, *MDY, *DMY, or *YMD.
#SITYE	#SITYE is a one-character field which is used when calculating the difference in days between two dates. It is usually sent blank. If the difference between two dates is to be calculated, a blank means one date is subtracted from the other. If this field is a 1, a 1 is added to the difference so that the beginning and ending date are included in the count. If this field is a 2, a 1 is subtracted from the difference which means neither date will be included in the count.
\$ERTST	\$ERTST is a one character field which should be sent blank. It will contain a 1 if two blank dates are sent, an invalid format is sent, or X0028 finds a problem with either date.
\$\$X	\$\$X is a 9 character field which contains the number of day difference to be calculated between #SIDA1 and #SIDA2. If #SIDA1 is blank, the reverse date will be placed in #SIDA1. If #SIDA2 is blank, the future date will be placed in #SIDA2.
#SICT1 (Optional)	#SICT1 is a 2 character century field for #SIDA1.
#SICT2 (Optional)	#SICT2 is a 2 character century field for #SIDA2.

E.5 X98DAY

X98DAY is an RPG program which determines the day of the week and the day and month names for a given date. It uses X0028 for date conversion.

E.5.1 Using X98DAY

The Data Dictionary item that X0028 uses is #CYR. It establishes the last year of the floating 100-year business window. See the User's Guide for X0028.

Note: X98DAY only works inside this 100-year window.

E.5.2 Parameters

The parameters to pass to X0035 are ALL type Alpha. If the calling program is written in CL, be sure the variables are *CHAR.

Parameter	Description
#SIDAT	#SIDAT is a 6 character field which can be any format as long as it agrees with the From format field and has only digits from 0-9.
#SIFMT	#SIFMT is a 7 character field describing the FROM format. It can be *SYSVAL, *JUL, *MDY, *DMY, or *YMD.
#SIDAY	#SIDAY is a 29 character field which will contain the converted day name, month name, day and year. If an 'A' is sent in this field, the month and day abbreviations will be used for a maximum size of 17 characters.
#SNDAY	#SNDAY is a one character field which will contain the number for the day of the week, 1 = Sunday, 7 = Saturday.
#SOFMT	#SOFMT is a 16 character field which is used to send an override output format. The edit codes are MM, DD, YY, YYYY, AM and AD where AM and AD are the abbreviated month and day names. The entries can be separated by comma, :, ., /, or a blank.

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