JD Edwards World

Advanced Programming Concepts and Skills Guide Release A9.3 E21952-02

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JD Edwards World Advanced Programming Concepts and Skills Guide, Release A9.3

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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 http://www.oracle.com/pls/topic/lookup?ctx=acc&id=docacc.

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 1

Conventions

The following text conventions are used in this document:

Convention	Meaning
boldface	Boldface type indicates graphical user interface elements associated with an action, or terms defined in text or the glossary.
italic	Italic type indicates book titles, emphasis, or placeholder variables for which you supply particular values.

Convention	Meaning
monospace	Monospace type indicates commands within a paragraph, URLs, code in examples, text that appears on the screen, or text that you enter.

Part I

Overview

This part contains these chapters

- Chapter 1, "Overview to JD Edwards World Software"
- Chapter 2, "Overview to APCS System"

1

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.

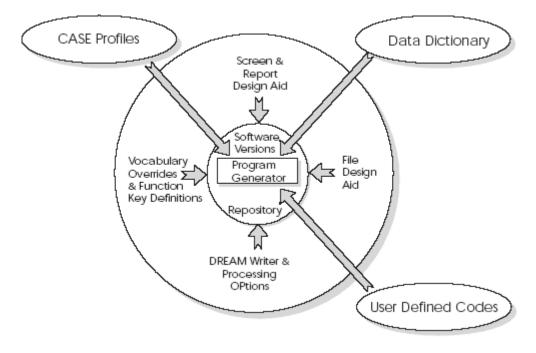


Figure 1–1 JD Edwards World Program Modules

the separate modules that contribute to the functioning of a JD Edwards World program.

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"

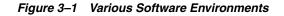
Overview to Version Control

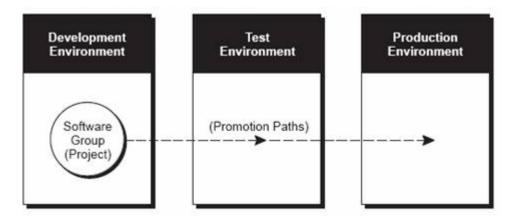
This chapter contains these topics:

- 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.





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.

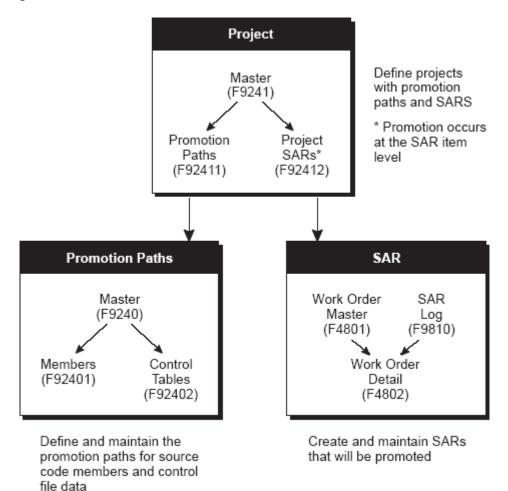


Figure 3–2 Version Control Process

the version control process divides the tasks.

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).

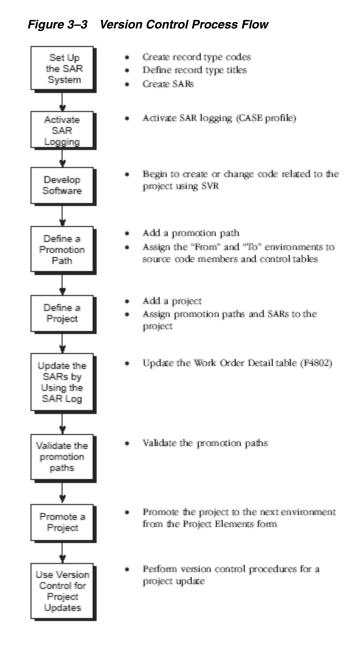
After you finish developing the software, you promote the software from the Project Elements form to the next environment.

You will work with the following areas:

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

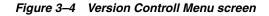
- Work with SAR Log
- Work with Promotion Paths and Projects
- Promote a Project
- Promote Project Updates

3.2 Version Control Process Flow



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.



G9261 Daily		Edwards & Company rsion Control	JDED
2. 3.	BASIC OPERATIONS Software Versions Reposit Manage Promotion Paths Manage Projects	ory 14. Record Type Codes 15. Record Type Titles 16. CASE Profiles	
7,	Double Byte Mandatory Opti Analysis Process C9822 Conversion	ons INQUIRIES 19. SAR Inquiry by Referenc 20. Inquiry by SAR, Proj an	
11.	QA FUNCTIONS Edit and Promote Super SAR	PURGE DATA FILES 23. Purge SAR Log File	
Selecti	lon or command		
		.3 Development LA559 dwards & Co 1985,1996 QPADE	

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"r 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

98312	Create User Data Librar	ies Form ID P98102 Version ZJDE0001
	rious options described below.	Enter the desired values and
to be copied fr Enter the "TO" I you are creating Enter the "TO" (are creating con If you do not er all common files	'Library where data is com (e.g.JDFDATA). Production Library where gifiles (e.g. PRODLIB). Common Library where you mmon files (e.g. COMMON) ster a Common library s will be created in the	JDFDATA DEVDTA DEVCOM
Production Libra	46 J <	
	P5=Printer Overrides	

Figure 4–1 Create User Data Libraries screen

- **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.

Create Library (CRTLIB) Type choices, press Enter. Library <u>DEVOBJ</u> Name Library type <u>*TEST</u> *PROD, *TEST Text 'description' <u>*BLANK</u> PROD, *TEST Fisher State Stat

Figure 4–2 Create Library screen

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 (DEVSRC), 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 (CRTLIB) and press F4.

Figure 4–3 Create Library screen

Type choices, press Enter.	Create	Library (CRTLI	B)	
Library	:::		Name *PROD, *TEST	
F3=Exit F4=Prompt F5=R4 F13=How to use this display		F10=Additional F24=More keys	parameters	Bottos F12=Cancel

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

Print format	•	*	•	•	ť.	•	•	•	•	*CHAR *CHAI	R, *HEX
Create file											*YES
Replace or ad											, *ADD, *REPLACE
To member or											*FIRST, *FROMMER
Library . From member											*LIBL, *CURLIB generic*, *FIRST, *ALL
To file											*PRINT
From file . Library .											*LIBL, *CURLIB

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.

Type													ve Member (RMV)	Sec.				
Data	orar	Y.		÷.		+	+		+	-		¥1	JDESRC DEVSRC		*LIBL,			
Membe	er.												<u>P93002</u>	Name,	generi	*, *A	LL	
F3=E5			F4.	roe	up!	t	1	75.	R	ef 1	ee.	sh	F12=Cancel	F13=How	to use	this	Bot display	

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 DEVSRC.			
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

Type choices, press	Source	Physical File	(CRTSRCPF)	
File	:::	JDESRC DEVSRC 92 *NONE *BLANK	Name, *CURLIB Number Number Name, *NONE, *	FILE
F3=Exit F4=Prompt F13=How to use this		F10=Additiona F24=More keys		Bottom F12=Cancel

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 Action Code.	Ţ		ary List Revisions
Library List Description. Menu Program	Name <u>T</u> <u>T</u> ID <u>P</u>	EST echnical Trai 00MENU	ning Example CLTOBJ JDFOBJ DEVDTA DEVCOM DEVSRC CLTSRC

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

	Code. I Elibrary Library PRISTINE A52DEV PRMGEN TECPROG TECOV KEGCASE	AZZINI Sign-on Menu A92 A92 A92 A92 A92 A92 A92 A92	Description MASTER PRISTINE DATA LIBL A5.2 Case Cert & G Development Teating A52 Program Generator * List Name Not in Master File Testing A52 Tech Poundations * List Name Not in Master File	
--	---	---	---	--

Figure 4–8 User Signon List Revisions screen

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 Informati User ID. Library List DEVSRC CLTSRC JDFSRC SECURITY OGPL	ion Action Code I . <u>TEACH</u> J . <u>OTEMP DEVOBJ CLTOBJ JDFOBJ DEVDTA DEVCC</u>
User Security: User Key	Allow Past Path (Y/N) OBATCH 55 4 00 *NOLIST OPRINT
Set Attention Program	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

		Copy Library (CI	PYLIB)	
Type choices, p	oress Enter	2		
Existing librar New library . Create library	ay 	<u>*yes</u>	Name Name *NO, *YES	

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 <u>01</u> Address Book	
Library Name:	From JDFDATA To PROD	
1 F0070 1 F009101 1 F0101 1 F0101A 1 F0101XX 1 F0101XX 1 F01092 - F01092 - F01093 - F01094 - F0114 - F0114W - F0116	File Type Description PHYSICAL Country Constants Master File PHYSICAL Word Search Occurrence Master PHYSICAL Address Book Master PHYSICAL Address Book Master PHYSICAL Address Book Amater PHYSICAL Address Book - Batch File PHYSICAL Supplemental Data Base - CORE PHYSICAL Supplemental Data Base - Code PHYSICAL Supplemental Data Base - Narrative PHYSICAL Supplemental Data Base - Narrative PHYSICAL Supplemental Data Base - Narrative PHYSICAL Juser Sequence Preference PHYSICAL Address Book - Who's Mho PHYSICAL Address Book Memo/Text Information PHYSICAL WF - Memo Information Work File PHYSICAL Address Book Locations PHYSICAL Address Book Word Search Master	
_ F0116 _ F01800		

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 F	ile (CPYP)
Type choices, press Enter.	
Library	101Name, *PRINT DEVDTAName, *LIBL, *CURLIB RSTName, generic*, *FIRST, *ALL RCMMBRName, *FIRST, *FRCMMER 2D*NONE, *ADD, *REPLACE 2*NO, *YES
Which records to print	NONE, *EXCLD, *COPIED
	ONLY Name, *ONLY, *ALL 55 Number, *START More
F3=Exit F4=Prompt F5=Refresh F1 F13=How to use this display F2	

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

Coj	py File (CPYF)		
Type choices, press Enter.			
Copy to record number Copy from record key: Number of key fields Key value		Number, *END Number, *NON	
+ for more values			
F3=Exit F4=Prompt F5=Refresh F24=More keys	F12=Cancel	P13=How to us	More e this display

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 Cop	by DD, VO, DW, UDC, SVR, Menus
From Library <u>CLTCOM</u>	To Library DEVCOM
Dictionary Item AN8	Language Appl Ovr Scrn/Rpt
Vocabulary Overrides	
DREAM Writer Form	Language
User Def Codes Sys Type	Language
Software Versions Rep	_
Menu Identification	Language
Generic Rate/Msg Sys Type	
F24=M	fore

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	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.		
	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 #, @, \$.		
	You can create protected data names by using \$xxx and @xxx, where you define xxx.		
	Messages can contain up to 10 characters. Types of messages are further defined by glossary group.		
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	
Search X-Ref . Est. Hours . Phase. Type . Tax Expl Code. Subledger Inact Customer No. Manager.	APCS_Class Student SAR 40 55 2 Priority H 1001 Tax Rate/Area. 6001 Active Subledger Bdwards, J.D. Allen, Ray	Status <u>10</u> Transaction <u>11/12/93</u> Date Assigned.
SAR setup for w	Description ork to be performed during the Ad cepts and Skills class 96	Vanced Option
Opt: 1=Insert	9=Del F5=More Desc F8=Cat Cod	les P21=Print F24=More Key

5.2.1 What You Should Know About

Торіс	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	This is the parent work order number. You can use this number to:
	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
	Form-specific information
	For Work Orders
	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:
	 Description
	 Extended description
	 Tax code
	 Tax rate and area
	 Date completed

Field	Explanation	
Action Code	A code that indicates the activity you want to perform. Valid codes are:	
	A – Add new record	
	C – Change existing record	
	D – Delete existing record	
	I – Inquire on existing record	
	. – End of program or function	
	space – Clear the form	
	If you enter a code that is not active, the system highlights the code and no action occurs.	
	Note: Depending on how your company has set up action code security, you might not be authorized to use all action codes.	
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	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.	
	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.	
	Security for this field can prevent you from locating business units for which you have no authority.	
	Note: The system uses this value for Journal Entries if you do not enter a value in the AAI table.	
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	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.	
	Will default from system date or you can enter a date.	
Planned Comp	The date the work order is planned to be completed.	

Field	Explanation	
Phase	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.	
	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.	
Completed	The date the work order or engineering change order is completed or canceled.	
Туре	A user defined code $(00/TY)$ that indicates the type classification of a work order or engineering change order.	
	You can use work order type as a selection criteria for work order approvals.	
Priority	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.	
	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.	
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	The address book number of a manager or planner.	
	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.)	
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	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.	
	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.	

Field	Explanation
Tax Rate/Area	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).
	Typically, U.S. sales and use taxes require multiple tax authorities per tax rate/area, whereas VAT requires only one simple rate.
	The system uses this code to properly calculate the tax amount.
Subledger Inact	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.
	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.

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

4802	W.O. Detail Entry Full Description of Request	Record Type 1
Action Code Order Number	ç	18
Descriptio		Option
AR setup for work to rogramming Concepts	be performed during the Advanced and Skills class.	<u> </u>
Opt: 1=Insert 9=1	Delete F5=Re-Fresh F8=Record Ty	mes F24=More Keys

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.

48016		Work Order - Category Codes	
Action Code W.O. Number W.O. Flash Mess		Tech for Programmers Class	
Phase Category 02. Category 03. Category 04. Category 05. Status Status Service Type Skill Type Experience Leve Category 10.	· · · · · · · · · · · · · · · · · · ·		
Originator Supervisor Std. Desc Search X-Ref .	 	·	

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.	
	Form-specific information	
	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).	
	Form-specific information	
	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

48014	Single Task Det	ails	2
Action Code]			Parent W.O. No W.O.Number289
Description Status Comment	Student SAR		Charge to BU1001
Search X-Ref Est. Hours			Cost Code
Est. Hours	40		Start Date 03.01.94
Est. Amount	1.500	0111221-00110	Planned Comp . <u>31.12.94</u>
Phase	55 Reserved f	or Clients	Completed
Гуре	Priority .	8	Status 10
Tax Expl Code	4802T1	Work Ord	er Search
Subledger Inact	Order Nu	mber 28	Status 10 er Search 2 Type ± Tass
Customer No		89 WO APCS C	Electrical
Manager	6001 _ 4	00 WO Rework	DOLYDD 12030 DECK
Dee	- 3	90 WO BACK,	DRAWER, 12x30, DESK Chassis Frame Supports CRT Chassis Frame
Des	CIIPTIO -	A1 NO 10/400	Chassis Frame Supports
SAR setup for work	to pe _ 6	64 WO Electr	CRI Chassis Frame
Programming Concer			ical Phase II
Engine REQ125-796			ical Phase II
		99 WO Other	
		01 WO Electr	
			F3=Return F24=More Kevs
Opt: 1=Insert 9			

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



48201	Scheduling Workbench	Fir Rem Cat I P M
Action Code I Job or BU Originator Customer Number		
Category Codes Phs	Parent W.O. No Cost Code CC2 CC3 CC4	Type Model Prior CC5
<u>Q</u> <u>Number</u> <u>Description</u> <u>1347</u> Subcontractors 289 APCS Class	10	Status_CommentT P tudent_SAR2 H
Opt: 1=W.O Entry 4=Return		

Field	Explanation	
Category Codes	Any number or characters that will be used to cross-refere 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.	
	Form-specific information	
	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.	
М	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.	
	Form-specific information	
	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.	
Туре	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.



48201	Scheduling Workbench	Pha Cat Cat T P M
Action Code I Job or BU Originator Customer Number	<u>1001</u> Work Orders in Progre	
Manager	Parent W.O. No Tu Search X-Ref	Type Model Prior CC5
 1347 Subcontractors Planned Comp Start Date . <u>05/2</u> 289 APCS Class Planned Comp <u>12/</u> 	X-Ref No. St Kours Scheduled	2 Est. Hours . W.O. Date <u>05/26/93</u> 2 Student SAR <u>2 H</u> Est. Hours . <u>40</u>
Opt: 1=W.O Entry 4=Ret	urn w/# 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

00051		ail Spec		User Defi	ystem Code ned Codes		00 RT
Action Code	· · · *			Skip To C Work Orde	r Detail S	specs.	
01 Character	21.1993						
Code Po	Descripti 11 Description						
	nal Disposition						
C To	ol and Equipmen	t Instru					
	fety Provisions						
	an and Drawing uipment Down Ti		0				
<u>r by</u>	arbienc boen 11	1102					
102 A							

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

c. Over Titles
Sub-Title 3 Production Time In
re 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,

which classifies it for promotion. You must create record type codes that your Work Order Instructions table does not have currently.

To create record type codes

- 1. From the Version Control menu (G9261), choose Record Type Codes.
- **2.** On User Defined Code Revisions enter the following character codes and descriptions:

Figure 6–1 User Defined Code Revisions screen

User Defi	ned Code	Revisions System Code <u>00</u> User Defined Codes <u>RT</u>
I		Skip To Code Work Order Detail Specs.
	a	
riginal Request		
	I	Description

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
Н	Vocabulary Override Changes
Ι	Database Changes
J	Constants Data File Changes
K	User Defined Code Changes
M	Connected SAR Numbers
N	Generic Rate/Message Type Changes
0	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

. 1	System Code 00 User Defined Codes RT Skip To Code Work Order Detail Specs.
Description	
NA NEWYARA	
	Description nal Request

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			
С	Member Name	Source Library_	ObjectLibrary_
D	Menu Name	Option Number	Job_To Execute_
E	AAI	CompanyNo_	
F	CL_ Program	Program	Video/Rpt_
G	FormID	_VersionNo	
Н	Scr/RptName_ 		
I			

Record Type	SUB-TITLE 1	SUB-TITLE 2	SUB-TITLE 3
J			
K	HelpStart	HelpStop	
M	SysCode_ 	DTAIName_	
N	SysCode_ 	RecType_	
0	SARNo	SARNo_	SARNo_
Q	SysCode_ 		
S			
U	Reference_ID/Code_ 	Attachment Needed-Y/N	
W	Program Name		
Z	ReleaseID	PTF Number	Date Included_
3	SystemCode	Line Number	ActionCode

6.3.2 What You Should Know About

Торіс	Description	
Verifying the record type titles	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.	
	To access Single Task Details, see Section 5.2, "Creating Work Orders".	

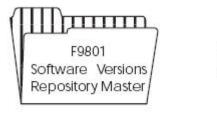
Work with Software Versions Repository

This chapter contains these sections:

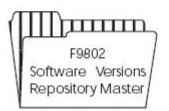
- Section 7.1, "Working with Software Versions Repository (SVR)"
- Section 7.2, "Accessing the Software Versions Repository"
- Section 7.3, "Member Identifiers"
- Section 7.4, "Naming Conventions"
- Section 7.5, "The JD Edwards World System Codes"
- Section 7.6, "Examples of Program and File Names"
- 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



A master directory of all files, programs, screens, reports, and copy modules.



Stores the member locations for each member master record.

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	e Versions	Repositor	Y		
Action Code. Member ID. Punction Code Function Use System Code. Reporting Sys Base Member N Maint/RSTDSP		ait Option.	· · · _ G		Sev .	- <u></u>	
Copy Data (Y/) O Source P Library	Object	Source File	SAR Number	Version		User	Date Modified
Opt: 1=Brow	ae 2=Ed(t	acony 5=SAS	8 BaDrint	9-D1t 10-D		14=C++	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	The name of the Software Versions Repository member.
	Form-specific information
	The source file contains the source member. In JD Edwards World, three source files reside in the JDFSRC library.
	They are:
	 JDECPY for copy modules
	 JDESRC for RPG, DDS, and CL source code
	 F98CRTCMD for precompiler commands

Field	Explanation
Description	Identifying information of the member, such as Trial Balance by Business Unit. Associated programs, screens, and reports should share the same description.
	The description associated with each member is used to further identify the purpose of the member.
	 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	The system code the object is assigned to and delivered under.			
	Form-specific information			
	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.			
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	This field allows for the logical grouping of members.				
	Form-specific information				
	This field simply allows for logical grouping of members.				
	For screens, reports, RPG programs and CL jobs, this name is usually the RPG program name associated with a particular member.				
	For logical files, this name is the physical file upon which it is based and is required.				
Omit Option	Designates items in the Software Versions Repository file that would be bypassed for a new release. These codes are as follows:				
	H – Held from all releases				
	X – Omit from all releases				
	S – Omit Source from all releases				
	O – Omit Execution Object from all releases				
Generation Sev	Allows the user to designate a severity level when compiling a member.				
	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:				
	CHGCMDDFT CMD(CRTRPGPGM) NEWDFT('GENLVL(20)')				
	RPG IV programs use CRTBNDRPG so the command to change that default is				
	CHGCMDDFT CMD(CRTBNDRPG) NEWDFT('GENLVL(20)')				
	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.				
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)	Use with OVERLAY. Do not use with PUTOVR/OVRDTA.			
	DFRWRT = *YES (Defer Write)	All writes to the form field or file formats will be collected and written at one time.			
A	RSTDSP = *NO	Overlay			
	DFRWRT = *NO	Each write statement is written to the screen.			
В	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			

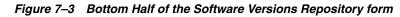
7.3.5 File Information

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.
	Form-specific information
	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).



P_ Li	brary	Object Library	Source File	SAR Number	Version ID	_ c	PR_	User ID	Date Modified
							-		
= =							_		
							-		
==							-		
	eeneda mad		dit 3=Copy 5-	Sure speed	here-cases or a		-		

Field	Explanation			
Source Library	The library containing the data to be accessed.			
	Form-specific information			
	The source library where the source file for the object is maintained.			
	This library is usually JDFSRC (for JD Edwards World) or CLTSRC (for the client) for production and DEVSRC for development.			
Object Library	The library in your Development Environment to receive the compiled object.			
	Form-specific information			
	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.			
	Leave the object library name blank for copy modules since they are not compiled objects.			
Source File	The source file containing the source member.			
	Form-specific information			
	At JD Edwards World, three source files reside inside of the JDFSRC library.			
	They are			
	 JDECPY for copy modules, 			
	 JDESRC for all other source code, and 			
	 F98CRTCMD for precompiler commands. 			

Field	Explanation				
SAR Number	An abbreviation for software action request (SAR).				
	 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. 				
	Form-specific information				
	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.				
	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.				
	The edit for this field is controlled by the SAR information entered in CASE Profiles.				
Version ID	The software version number to be defaulted in the Software Versions Repository file.				
	Form-specific information				
	Identifies the JD Edwards World release level of the member in the designated environment.				
	Validated against User Defined Codes 98/RL.				
S C (Status Code)	Determines the status of the software in the development process.				
Development	Development Progress Code.				
	Indicates the progress of modifications made to the member.				
User ID	The IBM-defined user profile.				
	Form-specific information				
	User ID that last modified the member (automatically updated).				
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		Softwar	e Version	s Reposito	ary .		
Action Code Member ID Description Function Code. Function Use . System Code Reporting Syst Base Member Na Maint/RSTDSP . Copy Data (Y/N	. <u>P4256</u> . <u>Salem</u> . <u>RPG</u> . <u>164</u> . <u>42</u> me <u>P4256</u> . <u>0</u>	Order Invoi RPG Program Special F Sales Order Sales Order	B Orms Processin Processin F G N C	ng ile Prefix eneration ommon File	Sev .	21 N	
P_Library	Object Library JDFOBJ	Source <u>File</u> JDESRC	SAR <u>Number</u> 685935		S D C P 1 -	User ID JDE	Date <u>Modified</u> 11/12/93

Figure 7–5 Software Versions Repository screen

Action Code.	I							
Member ID								
Description. Function Code		Order Invo Printer Fil						
Function Use								
System Code.				ng				
Reporting Sys	tem <u>42</u>	Sales Orde:						
Base Member N				ile Prefix				
Maint/RSTDSP Copy Data (Y/		nit Option. ptional File		eneration : ommon File				
cobl pace (1)	117. M. VI	beromar erre	с <u>м</u>	CHEMPLE FARC		· 43		
0 Source	Object	Source		Version	s		lser	Date
P Library	Library	File	Number		<u> </u>			Modified
JDFSRC	JDFOBJ	JDESRC	672721	A7.3	_1.	J	DE	11/08/93
OPEDING.								

Figure 7–6 Software Versions Repository screen

9801		Software	versions	Repositor	CY.		
Function Cod Punction Use System Code. Reporting Sy	<u>J425</u> <u>Sale</u> <u>164</u> <u>42</u> stem <u>42</u> Name <u>P425</u>	CL Programs Special P Sales Order Sales Order Sales Order 50 Dmit Option.	orms Processi Processi P	ng ng ile Prefix eneration	Sev .	ы	
0 Source P Library JDFSRC	Object Library JDFOBJ	Source File JDESRC	SAR <u>Number</u> 644471		SD CP 1-	User ID JDE	Date <u>Modified</u> 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

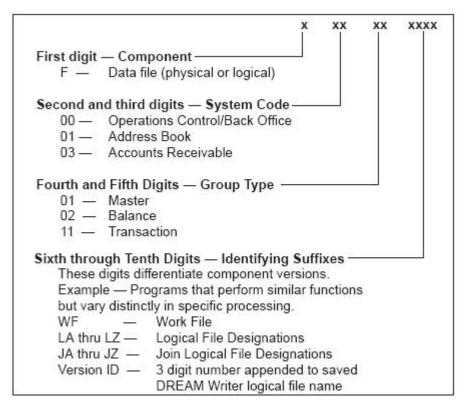
5		х	XX	xxx				
	First digit — Component							
	C — Common subroutine							
	I — Data structure; record formats							
	J — CL program							
	P — RPG program							
	R — Report							
	S — Special form T — Temporary work files							
	V — Video screen display file							
	X — Scrub and Edit Server							
	XF — Input/Output File Server							
	XS — Input only/Caching Server							
For a	Second and third digits — System Code ———							
complete list	00 — World Foundation Environment							
of system codes, see	01 — Address Book							
User Defined — Codes, system 98, record type SY	03 — Accounts Receivable							
	55 — Reserved for clients							
	Fourth, Fifth, and Sixth Digits — Group Type							
		247	-					
	100 to 199 — Transaction processing	3						
	200 to 299 — Inquiry only							
	300 to 399 — Input registers and jou	mais						
	400 to 499 — Operating reports	20						
	500 to 599 — Special purpose reports							
	600 to 799 — Standard management reports							
	800 to 999 — Housekeeping							
	DS — Data structure							
	Other — Window designations							

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.				
	 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.				
	 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:

System Number	System				
00	General Back Office				
01	Address Book				
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				
13	Equipment/Plant Management				

General System Codes

System Number	System			
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			
42	Sales Order Processing			

System Number	System			
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			
751	India			
75K	South Korea			
7T	Taiwan			

System Number	System			
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

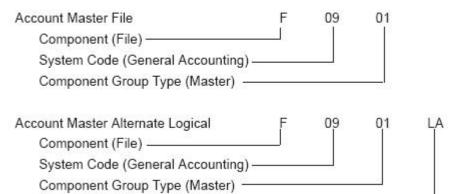
System Number	System			
00	General Back Office			
80	Business Intelligence			
81	DREAM Writer			
82	World Writer			
83	Finance Report Writer-FASTR			
84	Distributed Data Processing			
85	Custom Programming			
86	Foreign Language Translation			
87	JD Edwards World Internal			
88	Cautious Purge System			
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



Version Identification (Logical) ------

Figure 7–10 Video Screen Name Breakdown

Videos (Screens)

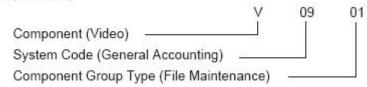


Figure 7–11 RPG Program Name Breakdown

RPG Programs

1	

Figure 7–12 CL Program Name Breakdown

CL Programs

	J	09	01
Component (CL Program)		1	
System Code (General Accounting)	3 <u>1</u>		
Component Group Type (File Mainten	ance)	a la	

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

	. <u>PGFDTA73</u> Reporting Sys
File ID	Description
F00021 F00021LA F0006JA F0006JE	Next Numbers by Company/FY - Automatic Next Numbers by Company/FY - Automatic - Logical Key Co,Seq JF - BILLING ONLY - F0006/F0911 - Cost Center JF - Profit Recognition F0006/F5144 (Cost Center) LF - JOB COST CNLY - 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
F0031LB	PC Batch Entry - Error File

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.

9801	Software	Versions Repository	Y	
Action Code Member ID Puscription Punction Code System Code Reporting System Base Member Name Maint/RSTDSP . Copy Data (Y/N).	F0911LA LF - Doc Type, Doc LF Logical File 230 Transaction 00 Technical Fo 02 General Acco F0911 1 Omit Option.	s Files undation unting File Prefix Generation S	<u>GL</u> Sev .	ne ₩, Ext
P_Library_Lib	ject Source prary File PDTA JDESRC	SAR Version Number ID 591710 A61	S D User <u>C P ID</u> 1 JDE	Date <u>Modified</u> 03/22/93

Figure 7–14 Software Versions Repository screen

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

			Repository	3		
Function Code Function Use System Code	<u>P0006JA</u> <u>JF - BILLING ONLI LF_ Logical Fil 210 Master Fil 00 Technical F <u>00 Technical F</u> <u>00 Technical F</u> <u>00 Technical F</u> <u>00 Onit Option</u>.</u>	les Foundation Foundation F G	ile Prefix eneration 5	 Sev .	MC	
P Library Li	oject Source brary File FDTA JDESRC	SAR <u>Number</u> 493167		S D C P 1 -	User ID JDE	Date <u>Modified</u> 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	
0001	Gadarana Manadana Damadanan	_

9801		Softwar	e Versions	Repositor		elease.	161
Action Code. Member ID Description. Punction Code Punction Use System Code. Reporting Sys Base Member N Maint/RSTDSP Copy Data (Y/	- <u>CODSC</u> - <u>COPY</u> - <u>124</u> - <u>98</u> tem <u>98</u> ame <u>COOSC</u>	RPG Copy M Common S Technical Technical mit Option. otional Fil	odule ubroutine Tools Tools F	ile Prefix eneration	 Sev	:	
0 Source P Library JDFSRC	Object Library JDFOBJ	Source File JDECPY	SAR <u>Number</u> 603784	Version ID A61	S C 1		Modified

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

9801	SOLEWALS	versions	Repository				
Punction Code Function Use System Code Reporting System	V09ACCT Account Master Add DSPF Video Displa 111 File Maint 09 General Acco 09 General Acco P09ACCT Omit Option	y Files enance unting unting F	ile Prefix.	٩V			
P Library Li	ject Source brary File FOBJ JDESRC	Number	ID		R _	User ID JDS	Date Modified 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

9801	Software Versions Repository
Reporting System 01 Base Member Name P010 Maint/RSTDSP Copy Data (Y/N). N O Source Object P Library Library JDFSRC61 JDPOBJ61 JDXSRC61 JDXORJ61	ress Book Information

Figure 7–18 Software Versions Repository screen

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	Automatic Reinquiry				
	 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. 				
	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.				
F8	Optional Files				
	The system displays the optional files.				

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	Referen	ce					
Object	Type To L	isplay t Cd .	<u>V0006</u> P P		iness Uni programs			isio	na – S	Single	
o Nat	ne	Des	ription						Attr		
	P	m						Len	action		 7.0
_ P0006	6	Busine	a Unit M	laster Re	visions	- Singl	le	Mett.	ACRES-		 Y
_ P0006	6	Busine	a Unit ≯	laster Re	visions	- Singl	le	1921	ACCOL.		 Y
_ P0006	6	Busine	s Unit M	laster Re	visions	- Singl	le	1921L	<u></u>		Y
_ P0006	6		e Unit M		visions		le			legend	Y

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.

8

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.

JDRD

 G92
 J.D. Edwards & Company 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. Punctions Key Definitions
 8. Vocabulary Overrides

Figure 8–1 Computer Assisted Design (CAD) screen

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

Selection or command

.....

9801	Software Versions Repository
Copy Data (Y, O Source	985001Repository Services

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 Profi	les
Action Code User ID	UBLIC	
Source Library <u>K</u> Object Library <u>K</u> CL Source File <u>J</u> Data File Library <u>T</u> SAR Number	ESRC Comp PSRC Prog POBJ Comp ESRC Prin	am Creation Options pile Job Queue <u>COMPILE</u> j Gen Job Queue <u>CLONE</u> bile Target Release. <u>*CURRENT</u> it Option 1 us-Reference Listing <u>N</u> om
SAR Options SAR Pile Library II SAR Delivery Type <u>*</u> 1	<u>ST</u> Log t	o SAR# 0000000
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).
	 *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	Specifies which job queue will be used when submitting programs to compile.
	This job queue is used for programs with function code of RPG, RPGL, CBL, PLI, C and SYSC.
Prog Gen Job Queue	Specifies which job queue will be used when submitting jobs from the Program Generator.
	These jobs include the source code generation and the source code monitor from SEU.
Compile Target Release	Used by various AS/400 compilers (RPG, RPGL, CLP, COBOL, C) to compile an object compatible with a specified target release.
	 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	Used to designate whether or not a report will be generated when an object is compiled.
	0 – no print
	1 – print
	2 – print and hold spool file
	3 – print only, does not generate execution object (applies to COBOL and RPG only)
	4 – print when compile or creation fails
Cross-Reference Listing	Specifies whether a cross-reference listing will be generated for variables and fields in a program's compile listing.

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	Specifies the library where the Software Action Request (SAR) file for software development exists.
	• 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	Associated with SAR logging. SAR logging is a feature which tracks all activities related to modifying JD Edwards World' software.
	 *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	Access Repository Services
	This key will display a form that provides access to the other repository services including CASE profiles.
F9	Previous Member
	Allows you to re-inquire on the last record viewed.

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

Source Gen Opt (Puture)	98009	CASE Profiles
Source File		
SAR File Library <u>DDPDATA</u> SAR Delivery Type <u>*DFT</u> Default SAR Number Miscellaneous Source Gen Opt (Future)	Source File Source Library Object Library CL Source File Data File Library SAR Number Version ID	JDESRC Compile Job Queue COMPILE PGF087651 Prog Gen Job Queue COMPILE PGF08161 Compile Target Release. *CURRENT JDECLSRC Print Option 1 PGF07A61 Cross-Reference Listing N 774487 A6.1 Base
Source Gen Opt (Puture)	SAR File Library	
merbe marne obe(fracare) _ eno		

- **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 Action C	SAR Info
Repository Rec. P9242 SAR Number Revision Note .	Transfer <u>0</u>
Enter=Continue	F24=More

If you provided a SAR number on CASE Profiles, it displays on this form. If you did not provide a SAR number, provide one on this form.

If the Transfer field on Maintain User Default SAR Information is set to 1, a record will be created for the Version Control system. If it is set to 0, there will not be a record for the Version Control System.

- **2.** Complete the following optional field:
 - SAR Number

Торіс	Description
SAR number and delivery type combinations	The information you provide for the SAR Number and SAR Delivery Type fields affects how the system handles SAR logging.
	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.
	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.
	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.
Invalid SAR delivery types	*LOG and *NONE are not valid for the SAR Delivery Type field when you use the Version Control system.

9.2.1 What You Should Know About

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)	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.
	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.
	In addition, the SAR logging program runs a double-byte analysis against your RPG programs if you set this processing option to Y.
	If you specify Y, you also must indicate the name of the library that contains your SAR files. The default library name is JDCOMDATA.

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:

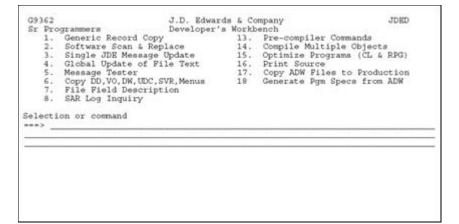
- Inquiry by user ID or SAR number with date range
- Exit to a maintenance program for the record type
- Exit to SAR detail
- Print option that allows for DREAM Writer selection

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



Action Code. Member ID Description.	:: <u></u>
Maint/RSTDSP Copy Data (Y/ O Source	

Figure 9–4 Software Versions Repository screen

2. The new SAR Log Inquiry form displays.

Figure 9–5 SAR Log Inquiry screen

9810		SAR Log Inquiry			
Action Code I					
	RAZZINI				
SAR Number , ,					
From Date					
To Date					
O A	SAR				
PCTy_Item	Number	Revision Note	Time	Date	User
C DG AN8	5		11:01:06	11/29/93	FRAZZIN
D SV F0101JA	12	2	12:34:03	11/29/93	FRAZZIN
D SV F0101LH	12		12:33:27	11/29/93	FRAZZIN
D SV F0911LD	12	2		11/29/93	FRAZZIN
D SV F0911LH	12			11/29/93	FRAZZIN
D SV F92801	12			12/01/93	FRAZZIN
D SV F92801LA	12			11/29/93	FRAZZIN
C HT IOOFSee	12			12/02/93	FRAZZIN
C ES PDAN	5	Added Member to SVR		11/24/93	FRAZZIN
D SV PDAN	5	Deleted Member			FRAZZIN
C SV PINDEX	12	EARST CONTRACTOR			FRAZZIN
C ES PINDEX	12			12/02/93	FRAZZIN
C PG P928200	12			12/01/93	FRAZZIN
C DD P928200	12	-		12/01/93	
	5=Work SAR	9=Delete F21=Print	F24=More	**1.471.25	T ISPUDD LIV

- **3.** 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 so 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.

	Development Environment				E	Test nvironme	nt
<u>Source</u> Code Members	Source File	Source Library	Object Library		Source File	Source Library	Objec Library
CLP	JDECLSRC JDESRC	DEVSRC	DEVOBJ DEVOBJ		JDESRC JDESRC	TSTSRC TSTSRC	TSTOBJ TSTOBJ
PF ·····	JDESRC	DEVSRC	DEVOBJ	·····	JDESRC	TSTSRC	TSTDTA
	6		I			8 8	1
Control		Develop Environ			10000	Test ronment	
<u>Control</u> File Data F0004 F0005			ment brary)TA		Envi Data		

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

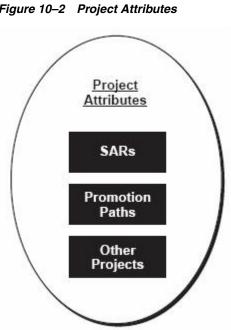


Figure 10–2 Project Attributes

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.

92403	manage 110	notion Paths	Code		1		÷.	10	-
romotion Pat	th . JDF73		Code Code	3	Υ.				
Promotion Path	Description	Release Number	Code			•			
JDF73	Transfer to JDF73	A73							
JDF73T	'T' file transfer to JDF73	A73							
	Transfer to JDF73 SECURE	A73							
	Transfer to JDU71	A71X							
JDX71		A71X							
	Utility CIS - PCCPY	A71X							
	Utility CIS - PCCPY	A71X							
	Utility CIS - PCCPY	A71X							
	Utility CIS - PCCPY	A71X							
	Utility CIS - PCCPY	A71X							
	Utility CIS - PCCPY	A71X							
	Utility CIS - PCCPY	A71X							
	Utility CIS - PCCPY	A71X							
UQP62	UQF build for A6.2	A62							
	UQF build	A71							
VCT	Version control training	A71							

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

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

Promotion Path . JDP73 Code 2 0 Promotion Description Release Path Number	* * *
Code 4 O Promotion Description Release Code 5 P Path Number	
P Path Number	111
_ JDF73 Transfer to JDF73 A73	· · .
Code 1 Code 2 Code 3 Code 4 . <u>CUR</u> Code 5 . <u>JDF</u>	

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=Ct1 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

	Code <u>I</u> on Path . <u>JD</u>		cansfer to JD	F73		
Mbr	Fr	om Environs	nent	Т	o Environme	nt
Type			Obj Libr	Src File		Obj Libr
ASM	SECURE	JDFSRC71	JDFOBJ71	JDESRC	JDFSRC73	JDFOBJ73
CLP	JDECLSRC		PGFOBJ73	JDESRC		JDFOBJ73
COPY	JDESRC	PGFSRC73 PGFSRC73	PGFOBJ73	JDESRC JDECPY	JDFSRC73 JDFSRC73	JDFOBJ73
DSPF	JDESRC	PGFSRC73	PGF0BJ73	JDESRC	JDFSRC73	JDFOBJ73
LF	JDESRC	PGFSRC73	PGFDTA73	JDESRC	JDFSRC73	JDFDTA73
LFS	SECURE	PGFSRC73	PGFDTA73	SECURE	JDFSRC73	JDFDTA73
PF	JDESRC	PGFSRC73	PGFDTA73	JDESRC	JDFSRC73	JDFDTA73
PFS	SECURE	PGFSRC73	PGFDTA73	SECURE	JDFSRC73	JDFDTA73
PLI	SECURE	PGFSRC73	PGFOBJ73	SECURE	JDFSRC73	JDFOBJ73
PRTF	JDESRC	PGFSRC73	PGFOBJ73	JDESRC	JDFSRC73	JDFOBJ73
PRTS	JDESRC	PGFSRC73	PGFOBJ73	JDESRC	JDFSRC73	JDFOBJ73
RPG	JDESRC	PGFSRC73	PGFOBJ73	JDESRC	JDFSRC73	JDFOBJ73
RPGS	JDESRC	PGFSRC73	PGFOBJ73	JDESRC	JDFSRC73	JDFOBJ73

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.

Кеу	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

Торіс	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).

92402	Promotion Path Control Files	
Action Code. Promotion Path 0 Rec From 2 Typ Data Lib C JDPCTL73 D PGPDTA73 C PGPDTA73 H PGPDTA73 M JDPCTL73 M JDPCTL73 M JDPCTL73 M JDPCTL73 M JDPCTL73	. JDF73 Transfer to JDF73 To To To Control Lib Record Type Description JDFTEM71 Members Affected JDFCTL73 Menu Modifications JDFCTL73 Neru Modifications JDFCTL73 DefEAM Writer/Processing Option JDFCTL73 Vocabulary Overrides JDFTEM71 Data Dictionary JDFCTL73 User Defined Codes	Control File P9001 P9090 P9001 P9200 P

Figure 10–7 Promotion Path Control Files screen

The From Data Libr column on the Promotion Path Control Files form shows the current location of the data records. The To Control Lib column shows the location to which the data records will be moved.

2. Specify library names for each record type listed on this form.

Function keys available on this form include:

Кеу	Description	
F9	Redisplays the record for the previously changed project.	
F10	Displays the Promotion Path Members Files form.	
F13	Displays the CASE Profiles form.	
F14	Retrieves the data library from your CASE profile and fills in the first From Data Libr field. This overwrites any information currently in the field.	
F15	Duplicates the library names from the first record type to the remaining record types.	

3. To copy library names from one record type to another, type 1 (Copy) in the OP (Option) field next to the record type you want to copy.

4. Type 2 (Target) in the OP fields next to the record types you want the information copied to, and press Enter. You can specify multiple targets.

10.3.2 Guidelines

- If you copy an existing promotion path to create a new path, be sure the library names for the control files are correct for the new path.
- To change library names, enter the new library names over the current ones.

10.4 Defining a Project

To define a project, complete the following tasks:

- Locate a project
- Add a project
- Assign promotion paths

Assign project SARs

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

Figure 10–8 Manage Projects screen (part 1)

92413	Manage P	rojecta			
Originator .			Code	e 1 e 2 e 3 e 4 e 5	· · TEC
P Project REINSTALL TEC TECHENH	Description Simplified Reinstall Process Tech Foundation Corrections Tech Foundation Enhancements User Based Pricing	<u>Client</u>	Orig i	Assigned	
UPGRADE Upgrade Enha VC Version Cont	Upgrade Enhancements/fixes	256006	878411 875561	878411	
	4 Byte System Code		878411	2211696	
	ils 2=Paths 3=SARs F5=Add		F24=Mor		

Figure 10–9 Manage Projects screen (part 2)

92413	Manage Projects
Project Client Originator Assigned To O	Code 1 . . . TEC Code 2 TEC Code 3 Code 4 Code 5
Project <u>Description</u> REINSTALL Simplified Reinst Code 1 . <u>300</u> Code 2 . <u>TEC</u>	

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.

9241	Software Development	Project
Action Code I		
Project Description Parent Project Edit File		
Client		Requested Planned Comp . , Date Assigned
Code 1 . <td></td> <td></td>		
F9=Redisplay F10=Prom	otion Paths F11=Pro1	ect SARs - F24=More Keys

Figure 10–10 Software Development Project screen

- **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.

Кеу	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 Promot	ion Paths	
Action Code. Project		Corrections	
0 Promotion P Path		Release Number	
	Transfer to current A62 Cum User based pricing	A62 A62	
		A62	
A72CUM	Transfer to current A71 Cun	A71	
A71PREV	Transfer to previous A71 Cum	A71	
A72CUM	Transfer to current A72 Cun	A72	
JDF62	Transfer to JDF62	A62	
JDF62TEC	Transfer to JDF62-SECURE Transfer to JDF71	A62 A71	
JDF71 JDF71TEC	Transfer to JDF71-SECURE	A71	
JDF73	Transfer to JDF73	A73	
JDF73TEC	Transfer to JDF73 SECURE	A73	
VCTL	Version control Update	A73	
		F11=Project SARs F24=More F	

2. 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.

- 1. 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 Elem	ent	8	
Promotion Path 0 Project T	. TEC Tech Foundation Co)rr)	ections Project	
Element Y	Description	St.	Status	
00718047 S	% Menu Job Stream Int/Bth Mix JDEDBG - V2R3 Misc. Fixes		Complete - in nex Test in Demo	t release.
	Can't Chg ValueDD Item Array		Complete - in nex	t release.
	User Defined Code Security User Based Pricing		Test in Demo Manager Review	
	ASI Rpt and Screen 4 Digits		Test in Demo	
	DDP RJE Code Correction CL 7.1		Complete - in next	t release.
00913176 S	Version Control - Build PTF	23	Manager Review	
	Quick Start - Vocab Overrides		Complete - in next	t release.
	Auto Build of JDE Mag File/JLF		Rework	
	Menu Integrity rpt/sys 55-59		Complete - in nex	t release.
	ASI Rpt Confusing When No ASIs		Test in Demo	
	F6 Copy from ASI -Prt Override			
	Next Number Description-00 Sys			
	Validation rpt-prt file names			
	Action Code Security 2=SAR Log 3=Edit 4=Promote			

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

2. 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:

Кеу	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).

11

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.

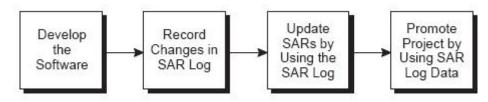
See Also:

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 Pro	note		
	. <u>TEC</u> Tech Foundation C . <u>JDF73</u> Transfer to JDF73		Project.	1079777 S/P
01079777 S 01081666 S 01083573 S 01086299 S 01087558 S 01088104 S 01088104 S 01088144 S 01093516 S 01093516 S 01092807 S 0110364 S 01102615 S 01104004 S 01107601 S	Description Multiple Jobs Submitted Release Specific Transfers Help Window Mods A73 Unable to use A Action Code Data Selection - HMCU V3R1 CRTCPGM/CRTBNDC Handle special char for DBCS Localization Issues in A/B No previous item displayed Finalize Version Control Video Illustration J970UGRADE Command Validation DW Merge Database-No Merge Opt WW-Reads all versions at once Don't delete SAR Log if Trf er Variable Length Field Support	23 Manager 1 23 Manager 1 26 Test in 1 26 Test in 1 26 Acturned 23 Manager 1 28 A test c 01 Complete 23 Manager 1 23 Manager 1 23 Manager 1 26 Test in 1 28 A test c 23 Manager 1 28 A test c	Review Review Demo - Alteady Review mplete - in next - in next Review Review Review Review Demo omplete Review	release. release.

To update the SARs

- 1. On the Edit and Promote form, inquire on the project you want to promote.
- 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

111 Hureipi	e Jobs Subs	110000	
4888 4889 J9242S J98901B J98901T P924124 P92422 P924210 P924210 P98905 P98905	Secondary Log Item		R C SAR Detail Sta
	Primary Log Item 4888 4889 J9242S J98901B J98901B J98901B P924124 P92422 P92422 P924210 P98905 P98907 J9242S	Primary Secondary Log Item Log Item 4888 J9242S J98901B J98901T P924124 P92422 P924210 P98905 P98907 J9242S	Primary Secondary Data File Log Item Log Item Library 4898 JDFCTL73 4899 JDFCTL73 39242S JDFSRC73 398901B JDFSRC73 9924124 JDFSRC73 99242D JDFSRC73 9924210 JDFSRC73 998905 JDFSRC73 998907 JDFSRC73 998907 JDFSRC73 998907 JDFSRC73 998907 JDFSRC73 998907 JDFSRC73 99242S JDFSRC73

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

Project I	BC Tech Foundation Corre
O Path Name	Description
_ A62CUM	
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 JDP71
JDF71TEC	Transfer to JDF71-SECURE

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 SAR 1079777 Promotion Path , JDF73	Tech Foundation Corrections Multiple Jobs Submitted Transfer to JDF73
0 <u>P</u> <u>Date</u> <u>Time</u> <u>User I</u> <u>- 01/22/96</u> 13:18:24 TFRCTL6 <u>- 01/22/96</u> 9:17:28 CHAN 01/16/96 12:139:59 CHAN	
Opt: 1=Details F5=Perfo	rm 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 SAR Number 1079777 Promotion Path . JDF73 Date of Edit 01/22/96 Time of Edit 9:17:28	Transfer to JDP73	
	Name 2nd Item Err 1946 Object Not Found 1946 Object Not Found	11 H # # # # # # # # # # # # # # # # # #
Opt: 1=Error Details	P24-More Keys	

- **6.** From the Pre-Promotion Edit History form, press F5 (Perform Edit) to perform the pre-promotion edit.
- **7.** 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.

Cause and Resolution	
Cause: You entered a "From" library that does not exist or you are not authorized to use.	
Resolution: Correct the library name, create the library, or get authorization to use it.	
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.	
Resolution: Check your job log messages.	
Cause: An XJDE or ZJDE version was expected but not found.	
Resolution: If an XJDE or ZJDE version should exist, create it. If not, then change the processing option for form ID P926304.	
Cause: You entered a "From" table that does not exist or you are not authorized to use.	
Resolution: Review the "From" library for the promotion path control table. Either correct the library name or create the table.	
Cause: You entered a "To" table that does not exist or you are not authorized to use.	
Resolution: Review the "To" library for the promotion path control table. Either correct the library name or create the table.	
Cause: A key you wanted to copy from the "From" library does not exist.	
Resolution: Review the "From" library for the promotion path control table. Either correct the library name or re-enter the data record.	

Error Code	Cause and Resolution		
2892	Cause: A "From" library name is the same as the corresponding "To" library name.		
	Resolution: Review the "From" and "To" libraries for the promotion path control table. Make the appropriate changes.		
4395	Cause: No records exist in the Promotion Path Members file (F92401) for the promotion path you specified.		
	Resolution: Complete the Promotion Path Members form for the promotion path.		
4396	Cause: No records exist in the Promotion Path Control file Members file (F92402) for the promotion path you specified.		
	Resolution: Complete the Promotion Path Control Files form for the promotion path.		
4397	Cause: No records exist in the SAR Log table (F9810) for the project you specified.		
	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.		
4400	Cause: No record exists in the Promotion Path Members file (F92401) for the function code of the member you want to promote.		
	Resolution: For the specified promotion path, enter the environment for the function code of the member.		
4402	Cause: No record exists in the Promotion Path Control Files file (F92402) for the control table you want to promote.		
	Resolution: For the specified promotion path, enter the environment for the control file of the record.		
4439	Cause: An error occurred while you attempted to copy a source code member.		
	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.		

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		So	ftware Tran	sfer		
Project SAR Number . Promotion Pa Release	10797 th . JDF73	77 Multip Transf	oundation C le Jobs Sub er to JDF73 000 W	mitted	006	
0 Member	Fr	om Environm	ent	т	o Environme	nt
P ID J924147 P92402 P924124 P924124 P924127 P924147 V92402	Src File JDECLSRC JDESRC JDESRC JDESRC JDESRC JDESRC	Src Libr PGPSRC73 PGPSRC73 PGPSRC73 PGPSRC73 PGPSRC73 PGPSRC73 PGRSRC73		Src Pile JDESRC JDESRC JDESRC JDESRC JDESRC JDESRC		Obi Libr JDPOBJ73 JDPOBJ73 JDPOBJ73 JDPOBJ73 JDPOBJ73 JDPOBJ73 JDPOBJ73
Opt: 1=Src	: & Obj 2=Sr	c 3=Obj F4=1	More F5=Ct1	Files F6=0	verride 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 ProjectTEC SAR Number1079777 Promotion PathJDF73 Release		tions d
0 Membe P Record Type Name _ M - Data Dictio 4888 _ M - Data Dictio 4889		Data Libr <u>To</u> <u>Copy Status</u> JDPTEM71 JDPTEM71
_ P - Software Re J9242S _ P - Software Re P9242D	JDFCTL73 JDFCTL73	JDFTEM71 JDFTEM71
Ont: 1=Conv to target	library P13=Copy All	PisaEdir Wiscow

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

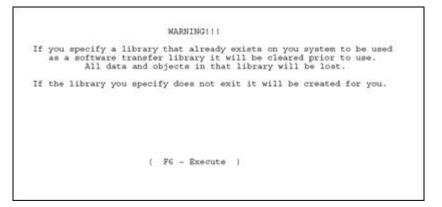
The version control process for project updates includes the following steps:

- "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

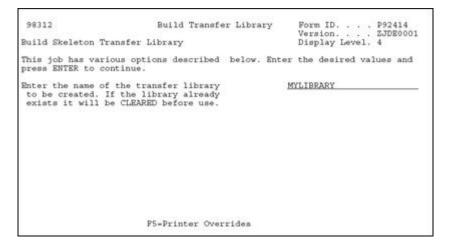
1. From the Software Install menu (G9262), choose Build Transfer Library.

Figure 12–1 Warning Message screen



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

Figure 12–2 Build Transfer Library screen



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	MYLIBRARYName, *NCNSYS, *ALLUSR, *IBM TAP01Name, *SAVF
	Botto

- 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 (RSTLI	B)	
ype choices, press Enter.			
aved library		Name, *NONSYS, Name, *SAVF	*ALLUSR, *IBM
'3=Exit F4=Prompt F5=Refresh '13=How to use this display	F10=Additional F24=More keys	parameters	Botto F12=Cancel

- 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 9924143 Version 2JDE0001
Control File Changes to 1	be Installed	Display Level. 4
This job has various opti press ENTER to continue.	ions described below. Ente	er the desired values and
Enter name of Transfer Li	ibrary.	MYLIBRARY
Print UDCs	1=Yes, 0=No.	1
Print AAIs	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.	11
	More	+
	P5=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 Version ZJDE0001
Control File Changes to	o be Installed	Display Level. 4
This job has various of press ENTER to continu	ptions described below. Ent e.	er the desired values and
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
Primary Second		
		Change
Menus G9261 Menus G9262		inged inged
Total Number of Records		and are
TOTAL NUMBER OF NECOLUS	LOL MERLE OUDDL	
DREAMwriter / PO POOPURGE	ZJDE0024 Payee Control Fil	e Furge Changed
DREAMwriter / PO P92412	ZJDE0001 Promote a Project	
DREAMwriter / PO P92413	ZJDE0001 Manage Projects	Changed
DREAMwriter / PO P92414	ZJDE0001 Build Skeleton Tra	msfer Librar Changed
	ZJDE0001 Control File Char	
	ZJDE0001 Load Transfer Sof	
	ZJDE0001 SAR Inquiry by Re	
Total Number of Records	for DREAMwriter / PO 00001	1
		 A second sec second second sec
		 A second sec second second sec
the short set of the second set	·	a house of
Vocbulary /Exits R924143	Print Install Records	
Vocbulary /Exits V9240		
Vocbulary /Exits V9240W	Promotion Path Master for Vocbulary /Exits 00030	
TOCAL MUMBER OF MECOLUS	to to to be and the call to be	,

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

```
WARNINGI!!

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.

( P6 - 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.

98312	Load Transferred L	Jibrary Form ID P924147 Version ZJDE000
Load Transfer Sof	tware	Display Level. 4
This job has vari press ENTER to co		.cw. Enter the desired values and
Enter name of Tra blank for no tr	ansfer Library or cansfer.	MYLIBRARY
Enter name of Target Object Library or blank for no transfer.		MYOBJ
Enter Name of Target Source Library or blank for no transfer.		MYSRC
EnterName of Targ blank for no tra	get New Files Library or ansfer.	MYDATA
	More	
	F5=Printer Override	-

Figure 12–9 Load Transferred Library screen

- 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 Tra	nsferred Li		rm ID P924147 rsion ZJDE0001
Load Transfer Software				splay Level. 4
This job has various opti press ENTER to continue.	ons desc	ribed belo	w. Enter th	e desired values and
Transfer UDCs	1=Yes,	0=No.	0	
Transfer AAIs	l=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.	٥	
Transfer CASE specs	1=Yes,	0=No.	2	
Transfer Helps	1=Yes,	0=No.	0	
	More			
P	5=Printe	r Overrides		

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

98312	Load Transferr	ed Library	Form ID P924147 Version ZJDE0001	6
Load Transfer Software			Display Level. 4	
This job has various opt press ENTER to continue.		below. Enter	the desired values and	
Transfer SVR	1=Yes, 0=No	0		-
Transfer DREAMWriter	1=Yes, 0=No	0		
	Bottom.			
	F5=Printer Over	rides		

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.

99630	Copy DD, VO, DW, UDC, SVR, Menus	
Prom Library MYLIB	MARYTo Library MYDATA	
Dictionary Item	Language Appl Ovr Scrn/Rpt	_
Vocabulary Overrides	Language Appl Ovr	
DREAM Writer Form	Language	
User Def Codes Sys Type	Language	
Software Versions Rep		
Menu Identification		
Generic Rate/Msg Sys Type		
P	4-More	

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

- 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.

in the Entity Data Model Dia Reference Inde	
	(F6 - Execute)

2. Press F6 to continue.

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

98042 Base Fi	10			Data	Mode.	ling	Fund	ction	els . n Use Dupl <u>0009</u>	230
Opt:	1=Move	Top	5=Display	7=Where	Used	8=Fields	F11=Ins	tall.	/Repoi	rting

Figure 14–2 Data Modeling screen (part 1)

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.

Base Pooo6		iness (nit Ma	ter		Function Use 230 Display Dupl 1 In Sys 00 09 03
<m:1< td=""><td>- F0010</td><td>F0010</td><td>Cot</td><td>spany C</td><td>onstants</td><td></td></m:1<>	- F0010	F0010	Cot	spany C	onstants	
	<1:M>	F0901	P09011	LE Ac	count Mast	er
		-M:M>	F4801	F4801	LB Work	Order Master File
		-M:1>	F0902	F0902	LA Accou	nt Balances
			-M:M>	P0311	F0311LG	Accounts Receivable Ledger
			-M:M>	F0411	P0411LK	Accounts Payable Ledger
		}	-M;M>	F0911	F0911LD	Account Ledger
	1	1	1	1		

Figure 14–3 Data Modeling screen (part 2)

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______Business Unit Master
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	The quantifier notation indicates the following:				
	M:1 – many to one				
	1:M – one to many				
	M:M – many to many				
	M:N – many to zero or many				
	N:M – zero or many to many				
	1:N – one to zero or many				
	1:1 – one to one				
Direction	The three direction notations are as follows:				
	-> – refers to				
	<- – referred to				
	<-> – way relation				
Туре	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 Ke	y 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

To I	b <u>F0006</u> Business Unit Maste b <u>E</u> All programa using bisplay <u>P</u> t Cd	
0 Name P	Description Jon Nugent Test Business Unit Master Revisions - Singl- Business Unit Structure Revisions File Conversion - Plug the default value Business Unit Master Print Update Bill Code If Business Unit Type Job Master Revisions Property/Building Revisions Work Day Calendar Automatic Accounting Instructions Revisions Convert Amounts to Domestic Decimal Tax File Revisions	100 Y = C N Y Y Y N N

Example Selection 8 - Fields

Figure 14–6 Data Modeling screen

	42 ase F1 0010		pany Con	Data Modeling	Functi	ovels . lon Use ny Dupl <u>00 05</u>	230
8	<1:M>	S		Business Unit Master F0901LB Account Master			
			-M:M> F -M:1>	_ I0006 - Business Unit M _ MCMCU KOI Business Unit _ MCDL01 Description _ MCDC Description - Com _ MCLDM Level of Detail. _ MCLM8 Address Number .	tions	PF	100000
	Opt: 3	1=Move	Top 5=Di	MCCO Company MCSTVL Type Business Uni MCSP01 Division x MCRP02 Region Opt:-2=Dictionary4=Se1F15=R splay 7=Where Used 0=Fields F1	A esequend	3 :eF3=F	85 Return

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.

980014	Object Cross Ref. Repository	
Type To I	<u>F0006</u> Business Unit Master <u>P</u> All programs using fil Visplay <u>P</u>	e
0 Name P	Description	Field Attr T Start Upd
P000661 P06238 P06371 P066111 P06618 P126410 P200 P23250 P26011 P26112 P26115 P26116 P26119	Business Unit Master Conversion Report - Payroll Check Register Report - Certified Payroll Register Tip Credit Generation with Interim Check Sales Allocation Report STAR - Columnar Spreadsheet Submit Network Job Texas 250 Report Gas Balancing - Entitlement Extract Gas Balancing - Entitlement Extract Gas Balancing Statement by Sales Point Gas Balancing Statement by Camer Gas Balancing Master Subfile Display	Y N N N N N N N N N N N N N N
Opt: 1=SVR	2=Create Object 3=Field Expl F21=Print	F16=Regenerate

Figure 15–1 Object Cross Ref. Repository screen

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

980	014		Objec	t.	Cross Ref. Repository	6
ОЪј	T	ame ype o Display unct Cd .	<u>₽0006</u> 문 표		Business Unit Master Statistics for progra	
0 p	Name	Des	cription			Field Attr T Start Upd
-	1,2 1,3 3,9	59 Total 13 Total	Statements Statements Statements Statements	as in	Comments RPG III	

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.

Object: Name . . . <u>P0006</u> Business Unit Master To Display _ Punct Cd . _____ O Name Description Pield Attr T Start Upd <u>P</u>______

Figure 15–3 Cross Reference Relationships Codes screen

3. Press Enter.

Figure 15–4 User Defined Codes Window

98 XR	Cross-Reference Relationships
Skip To Cod	le
/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
DP	All files using data field
- DP	All programs using data field
= EP	Error messages in a program
- F/	All /COPY members using file
4 FD	All data fields in file
Opt: 4=Sel	lect 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

Object: Name	9 <u>F0006</u> Business Unit Master					
Type To I Fund	e <u>P</u> All data fields in fil Display <u>D</u> pt Cd	e				
O Name P	Description				Start Loc	
_ MCMCU	Business Unit	12		A	1	
_ MCSTYL	Type Business Unit	2		à.	13	
_ MCDC	Description - Compressed	40		A	15	
_ MCLDM	Level of Detail	1 5 8 3 3		a.	55	
_ MCCO	Company,	5	1	ASSAA	56	
_ MCAN8	Address Number	8	0	S	61	
_ MCANSO	Owner/Receivable Address	8	0	S	69	
_ MCCNTY	County	3		2	77	
_ MCADDS	State	3		.8	80	
_ MCDL01	Description	30		A	83	
_ MCDL02	Description 02	30		A	113	
MCDL03 MCDL04	Description 03	30		A	143	
	Description 04	30		- 24	173	

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.

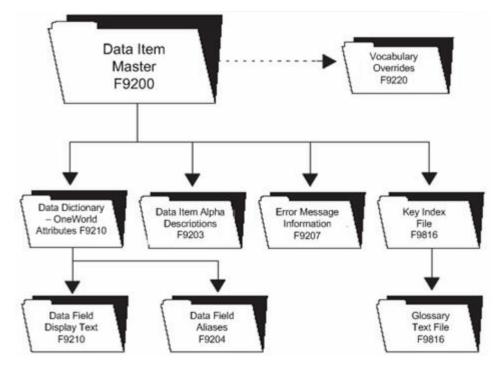


Figure 16–1 Data Dictionary Repository Files

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

Action Code Address Number	Address Book Revisions Long Addr No Resp. Bus. Unit		
Alpha Name , , ,	Search Type Payables Y/N/M		
81QM User Defined Codes Window ATI 01 ST Search Type Skip To Code	Receivable Y/N Employee Y/N User Code Subldgr Inact		

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 Action Code Data Item	Data Dictionary	Rls Last Chg Item Parent.
Glossary Group	General Information	
Reporting System System Code Data Item Class	Type Size	
Row Description Column Title		
Default Value	efault and Display/Edit Rul	<u> </u>
Search Program Next Nbr System		

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	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.		
	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 <i>#</i> , @, \$.		
	You can create protected data names by using \$xxx and @xxx, where you define xxx.		
	Messages can contain up to 10 characters. Types of messages are further defined by glossary group.		
	Form-specific information		
	Messages can contain up to 10 characters. Types of messages are further defined by glossary group.		
Glossary Group	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.		
	See also Section 16.6.1, "What are the Data Dictionary Glossary Groups?" within this chapter.		

Field	Explanation	
Alpha Desc	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:	
	Dates - Begin all Date fields with Date	
	Amounts - Begin all Amount fields with Amount	
	Units - Begin all Unit, Quantity, and Volume fields with Units	
	Name - Begin all 30-byte description fields with Name	
	Prompt - Begin any Y/N prompting field with Prompt	
	Address Number - Begin all address numbers (employee, customer, owner) with Address Number	
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.	
Туре	The RPG data type. Refer to UDC 98/DT.	
	Form-specific information	
	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.	
Size	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	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.	
	The array data item names are restricted to certain lengths depending on the number of array elements:	
	3 bytes - 1 to 9 elements	
	2 bytes - 10 to 99 elements	
	1 byte - 100 to 999 elements	
Display Decimals Use this parameter to designate the number of decim currency, amount, or quantity fields the system displ example, U.S. Dollars would be 2 decimals, Japanese would be no decimals, and Cameroon Francs would decimals. Data Item Class groups will have the same decimals as the Class definition. Most decimal data f stored in the data files as whole numbers and the Dis Decimals value is used to display or print the data co		

Field	Explanation		
Row Description	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:		
	U/M – Units of measure		
	YTD – Year-to-date		
	MTD – Month-to-date		
	PYE – Prior year end		
	QTY – Quantity		
	G/L – General ledger		
	A/P – Accounts payable		
	DEPR – Depreciation		
Column Title	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.		
Default Value	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.		
	Caution: If a blank entry is allowed, default values should not be used.		
Data Display Rules	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.		
	The developer can override these rules at the time of program creation.		
	The current list of these rules is kept in the User Defined Codes at SYSTEM = 98 and RECORD TYPE = DR.		
Data Edit Rules	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.		
	The developer can override these rules at the time of program creation.		
	The current list of these rules is kept in the User Defined Codes at SYSTEM = 98 and RECORD TYPE = ER.		

Field	Explanation		
Search Program	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 to be blank.		
	Program Requirements: For your text program to work correctly, you must allow it to accept three standard parameters:		
	 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

Торіс	Description		
Data Dictionary Security	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:		
	 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

9201	Data Dictionary Repository Rls Last Chg Item Parent.	
Action Code I Data Item ATI Glossary Group D Alpha Desc Sear Reporting System . 01 System Code Data Item Class Row Description <u>Sear</u> Column Title <u>S</u>	9204 Data Field Alias Action Code I Data Item <u>ATI</u> Search Type Alias Type <u>Alias</u> 1 <u>ADDRESS TYPE 1</u> 2 Address Type1	imals als
Default Value		Nustify

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:

- $\bullet 1 = PL1 \text{ or } COBOL$
- 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	JD Edwards World Interactive error messages		
	 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 		
М	Menu Messages		
	 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	JD Edwards World Batch error messages		
	 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. 		
С	Data Field Function Categories (Data Item Class)		
	 Groups common data elements 		
	 For example, CURRENCY, QTYINV. 		
D or S	Primary or Secondary Data Items		
	 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			
Н	User Defined program Helps			
	 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			
	 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			
	 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.			
Т	Terms			
	 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			
	 Begin with # 			
	 For example, #AA 			

To work with the glossary

1. 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		Glossary Revisions	Language
Action Code I Data Item ATL System Code 01 Glossary Group D	Desc Repo Search Desc	Search Type_ rting System Code.	
A user defined code (syste Book record you want the p searches, Examples;	system to sel		
X - E	mployees <-Employees		
C - 0	ndors stomers		
	cospects al Distribut	ion Lists	
F4=Search F9=Redi	splay 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	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.
	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 #, @, \$.
	You can create protected data names by using \$xxx and @xxx, where you define xxx.
	Messages can contain up to 10 characters. Types of messages are further defined by glossary group.
	Form-specific information
	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.

Field	Explanation		
Glossary Group	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.		
	Form-specific information		
	Note: If you need to assign your own error message numbers, use 4 digit numbers greater than '5000'.		
	For help text (glossary group H), the data dictionary "Inquiry/Revision Program" field may be used to specify the name of a follow-on item.		
	To create your own messages for the IBM message file (glossary group J), begin the data item name with your own three characters, for example CLT0001.		

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

92001	Data Item	Glossary Revisi	ons Language
Action Code Data Item Install System Co- Glossary Group .	<u>U00MENU</u> Des de. <u>00</u> Rep	c <u>Help - User De</u> orting System Co	fined Instructions
uny given program underlined. or the attributes section	in the system. If oth high lighted an	you wish to prov d underlined¢ te ns. All user de	y be entered by users for ided -high lighted-, or xt refer to the special fined instructions may be
P4=Search	P9=Redisplay Prev	P19/P20=Prev/N	ext Item F24=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 Data Item Row Description. Column Title	<u>ANS</u> Address Number <u>Address Number</u>	
0 Lan App1 P <u>Over</u> <u>44</u> Row	Description Vendor Number.	Column Titles Vendor Number
	Customer Number	Address Number
Row		
Opt: 5-Glossar	y F9=Redisplay Prev F19/20=Prev/Nes	t 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.

0002		Next Nu	nbers
	e <u>1</u> e <u>09</u>	General Acco	unting
	Use Next Account ID Journal Entries Consol Accounts	Next Number 21831 1946 200000214 	Check Digit
	y added addresses		- e it impossible to retrieve in attempts to assign

Figure 16–8 Next Numbers screen

16.9.1 What You Should Know About

Торіс	Description			
Next Numbers	The next numbers file is F0002			
	 10 element array 			
	 1 record per system 			
	 Modulus 11 check digit optional 			
	Once set, do not change			
	 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 			
	Ties with the Data Dictionary			
	 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
- 1. From Next Numbers, press F8.

Action Code	Fisc	I	Next Number	с	Auto
	Fisc				
	_	-			
	-				
		-		22	_
		-			
		-			
		-			
		-			
		-			
		-			
		-			-
		_			-
		-			-

Figure 16–9 Next Numbers by Company/Fiscal screen

- 2. Set the Next Number constant field to maintain next numbers by:
 - Company
 - Company and Fiscal Year

16.10 About the Field Reference File

The Field Reference File contains the specifications for each data item in the JD Edwards World Data Dictionary. Because the JD Edwards World Data Dictionary is different from the standard IBM Data Dictionary, each data item record needs to be translated from the JD Edwards World standard to the IBM standard.

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?

The system does the following:

- 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.

Always rebuild the files in the same library as previously built.

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

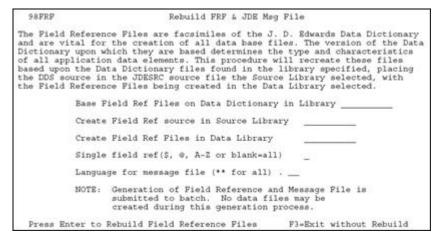
Enter a value from UDC table 01/LP to generate a message file for a single language. Only those translated error messages which can be seen on the Glossary screen with a language code will be included. Enter '**' for all languages installed on the system.

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



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.

Торіс	Description			
Enforced Prefixes	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:			
	 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	JD Edwards World file names begin with an F prefix and the format within that file begins with an I prefix.			

17.1.1 What You Should Know About

Торіс	Description			
Data Dictionary validation	• 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	 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	 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

	SOLUWAIG	Versions	Repository		
Description Function Code System Code Reporting System Base Member Name Maint/RSTDSP Copy Data (Y/N) . O Source Obj P Library Lib	F92801 SDM Item Master F PF 210 92 92 F92801 F92801 N Optional File ect Source	F G <u>N</u> C SAR <u>Number</u>	Version	s D	 Date Modified 02/02/92

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

	xtion <u>SDM Ite</u> (Y/N) Y QX		Member	ID F928 brary PGFS File Name JDES	
Data Item. D 192801	ata Field Desc.	K/S R	Function Specif	fications	Seg No
	ten ID		REFFLD(XIT)	F98FRFX	2.00
XDS D	tem ID Description	2		F98FRFX	3.00
XTY 1	ten Type	-		F98FRFX	1 4.00
XDT D	(tem Type Date Last Ship	-		F98FRFX) 5.00
XBU E	Susiness Unit	- 2		F98FRFX) 6.00
XOT C	Quantity - On Hand	- 3-	REFFLD (XOT	F98FRFX	1 7.00
	ten Unit of Measur		REFFLD (XUM	F98FRFX) 8.00
X001 I	ten Category Code	: 2	REFFLD(X001	F98FRFX) 9.00
X002 1	ten Category Code			F98FRFX	10.00
X003 1	ten Category Code			F98FRFX) 11.00
X004 I	ten Category Code	- 23	REFFLD(X004	F98FRFX	12.00
X005 1	ten Category Code	_	REFFLD(X005	F98FRFX	13.00
XIT I	ten ID	K			14.00

Field	Explanation
File Description	SVR member description for the file.

Field	Explanation
Unique Keys(Y/N)	Specifies if the data file contains unique keys.
	 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.
	Form-specific information
	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.
	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.
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 form the Software Versions Repository.
Based on File	Designates the physical file on which a logical file is based.
	 Defaults in from the Software Versions Repository and only displays for logical files.
	Form-specific information
	For physical and logical files, the Based On File is the same as the physical file.
	For join files, the Based On File is the name of the first physical file that the join is built over.
Data Item	The Data Dictionary name of the field or the record format name.
	 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	Used with the DDS Type specified in the K/S column.					
	• 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	Determines the order of the fields in the file.					
	Form-specific information					
	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.					
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.

92102	Data File Design Aid
Pile Description <u>LF - Bu</u> Unique Keys(Y/N) X File Prefix QX Bamed on File F92801	usiness Unit. Item ID Member ID F92801LA Src Library PGFSRC Source File Name JDESRC
Data Item, Data Field Desc. 192801 XCC Business Unit XIT Item ID	K/S Function Specifications Seq R PFILE(F92801) 1. K

Figure 17–3 Data File Design Aid screen

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	Dat	a File Design Aid	
Unique Key File Prefi:	iption <u>LF - Acct</u> s(Y/N) x GL ile F0911	ID. LT. DOI. Sub LT. Serv Date. Doc T. Member ID P091 Src Library DGFSI Source File Name JDESI	LLH RC
Data Item. 10911 AID MT DOI SBL DSVV DSVV DSVV DSVD DCT DOC KCO POST BC	Data Field Desc. K/ Account ID B Ledger Type K DOI Sub K Date - Service/Tax K Document Type K Document (Voucher, K K Document Company K G/L Poated Code S Bill Code		Seg No 1.0 2.0 4.0 5.0 6.0 7.0 8.0 9.0 10.0 11.0 12.0 13.0 14.0

17.3.3 Sample - Logical File with Omits

This example represents an AND condition for the omits.

92102		File Design Aid	
Jnique Keys File Prefix	iption <u>LF - Report</u> a(Y/N) x AB ile F0101	Code 01 Member ID	
0ata Item. 0101 0201 0201	Category Code - Add K	Principal Specifications PFILE(F0101)	Seg N 1. 2. 3.
N8 DFI DLI	Name - Alpha K Address Number K Date - First Invoic Q Date - Last Invoice _	COMP(EQ 000000) COMP(EQ 000000)	4. 5. 6. 7.
	-		8. 9. 10.
	-		11. 12. 13. 14.

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

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

Update Source	Ch	ang	(e)		(Y,	/N)	•	t.	ы				
Member ID File ID							8		F92801				
Src Library.				83			÷	÷	PGFSR	1			
Description.		12		2	4	4	ġ,	4	SDM It	em	Mae	ter	File
Function Code													
Return to Des	ign	()	78	1)		÷.	4	4	н				

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	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.					
	Form-specific information					
	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.					
	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.					
File Description	The description of a record in the Software Versions Repository file. The member description is often consistent with the base member description.					
	Form-specific information					
	The description associated with each file is used to further identify the relation of the file and its purpose.					
	 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	Designates the physical file on which a logical file is based.					
	 Defaults in from the Software Versions Repository and only displays for logical files. 					
	Form-specific information					
	For physical and logical files, the Based On File is the same as the physical file.					
	For join files, the Based On File is the name of the first physical file that the join is built over.					

Field	Explanation
Ordering of Fields	Determines the order of the fields in the file.
	Form-specific information
	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

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	
(xxxx) 'xxxx'	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.	

Standard editing commands available in SDA include:

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	Screen display fields.	
	 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	Subfile fields.	
	 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	Subfile Hidden fields.	
	SH fields store data that is not displayed on a screen.	

18.4 Field Name Standards

Field name standards for use in SDA include:

Field	Standard		
VC0 - Screen constants	VC0 (zero) fields display definitions or descriptions for a single piece of data or for a group of data.		
	VC0 fields are always output fields and the description that is loaded into the VC0 field is obtained from a separate file		
	 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	These fields display the row description or column headings from the Data Dictionary.		
	 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. 		
	You enter *VTX in the Field Name field in the Field Definition window for the next sequential text field name.		
	• The default size for VTX fields is 16.		
Line 24 is always VDL24	You cannot change the text for Line 24 by using the Field Definition window because it is too large.		
	Type over the text in Line 24 to change it.		
TTL@	Uses the default title from Vocabulary Overrides if the screen program is called from another program.		
	Uses the menu selection text if the screen is called from a menu.		
ACTION	Action Code field.		
	 The name assigned by SDA. 		
	 The default cursor keyword is assigned to the action code field. 		
*LITER - Literal fields	Literals are added by placing apostrophes around the text on the screen and pressing Enter. (For example, 'V928011').		

18.5 Updating or Adding Fields through SDA

Field	Explanation
* - Field Definition Window	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.
	 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.
	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).
& - Field Selection Window	Allows you to add new fields using the Pick List feature
	Causes the Field Selection window to display.
	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.
	Allows you to pull in one or all of the following at the same time:
	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

■ 00000000 000000000000000000000000000	
P Number Description Date Quantity Or B 00000000 000000000000000000000000000000000000	
B 00000000 000000000000000000000000000	000000 00 5 . 000 5 . 000 5 . 000 000000 00 5 . 000 000000 00

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.

929200			Item Search	
Business Unit	. BBBBBBBB	BBBBB 00000	000000000000000000000000000000000000000	000000000
Code 1 . 00 <u>B</u> 00000000 00 Code 1 . 00 <u>B</u> 00000000 00 Code 1 . 00 <u>B</u> 00000000 00	0 Code 2 0000000000 0 Code 2 0000000000 0 Code 2 0000000000	00000000000000000000000000000000000000	0000000 00000000 3 . 000 Code 4 0000000 00000000	. 000 Code 5 . 000 0000000000000000 00 . 000 Code 5 . 000 0000000000000000 00
Dict Name Data Type Row/Column Size Dft Cursor Lower Case OVRDTA OVRATR	XCCA 	Text Field Name Field Use Text Form Edited Change Duplicate Field Cond	Business Unit.	

Figure 18–2 Field Definition portion of the Item Search screen

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.		
	 *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.	
	 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.	
	 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	Ϋ́
Window	N
Wide Screen (Y/N).	х и и
Subfile Creation	
Subfile	N
Subfile Fold	X
Subfile Clear	원 문 권
Selection Exits	N
Record Format Level	
PUTOVR	N X
OVERLAY	
	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

92700	Item Maintenance	
Action Code B		
SFLCTL DELETE THIS FIELD		
DELETE THIS FIELD		
DELETE THIS FIELD		
DELETE THIS FIELD		
DELETE THIS FIELD DELETE THIS FIELD		
DELETE THIS FIELD		
DELETE THIS FIELD		
DELETE THIS FIELD		
DELETE THIS FIELD		
DELETE THIS FIELD		
DELETE THIS FIELD		
DELETE THIS FIELD		
DELETE THIS FIELD		
DELETE THIS FIELD		
	F24=More Keys	

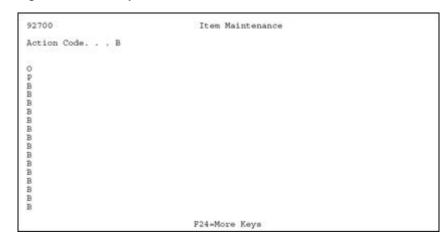


Figure 18–6 Example - Screen with Action Code, Subfile, and Selection Exits

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

28011		Item	Master	Informatio	n	
Action Code.	<u>B</u>					
Creen: V92) Dict Name Data Type	8011 XIT_	Text	d Defin		F	ormat: V9280111- Cond Ind

- 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

28011		Item	Master Informat	ion
ction Code.	<u>B</u>			
	•			
Dict Name	011	Text	d Definition	
Dict Name Data Type		Text Field Name		_Cond_Ind
Dict Name Data Type Row/Column Size		Text Field Name Field Use Text Form	d Definition	RI
Dict Name Data Type Row/Column Size Dft Cursor		Text Field Name Field Use Text Form Edited		RI _ <u>Cond Ind</u> HI
Dict Name Data Type Row/Column Size Dft Cursor Lower Case		Text Field Name Field Use Text Form Edited Change		RI
Creen: V928 Dict Name Data Type Row/Column Size Dft Cursor Lower Case OVRDTA OVRATR		Text Field Name Field Use Text Form Edited		RI _ <u>Cond Ind</u> HI

- **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 I	nformation	6	
Action Code.	· - B					
			•			
	011		d Defini	tion	F	ormat: V9280111
Dict Name Data Type		Text Field Name	d Defini	tion		Cond Ind
Dict Name Data Type Row/Column		Text Field Name Field Use	A. 2.16 202	tion	RI	Cond Ind
Dict Name Data Type		Text Field Name	A. 2.16 202	tion		
Dict Name Data Type Row/Column Size Dft Cursor Lower Case		Text Field Name Field Use Text Form Edited Change	A. 2.16 202	tion	RI HI UL ND	Cond Ind
Dict Name Data Type Row/Column Size Dft Cursor		Text Field Name Field Use Text Form Edited	A. 2.16 202	tion	RI HI UL	<u>Cond Ind</u>

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.
- **3.** 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	

- 1. Enter the literal text in the SDA Design area.
- 2. Enclose the text within single quotes.
- 3. 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 It.	em Master Information	
Action Code B		
Item ID <u>BBBBBBBBB</u> I Business Unit <u>BBBBBBBBBBBB</u> O		
Item Type <u>BB</u> O Date Last Ship . <u>BBBBBBBBBBB</u> Qty On Hand <u>BBBBBBBBBBBBBBB</u>	00000000000000000000000000000000000000	0000
Item Code 001 <u>BBB</u> O Screen: V928011F Dict Name XUM Text	cococococococococococococococococococo	

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 Business Unit	Item Desc 00000000000000000000000000
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

928011		Item	Master Informat	ion
Action Code.	<u>B</u>			
			Desc <u>BB</u>	BBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB
Item Type Date Last Sh Qty On Hand.	ip . BBBB		00000000000000000000000000000000000000	0000000000
Screen: V928	011	Fiel		00000000000 Format: V9280111-
Data Type Row/Column Size		Text Field Name Field Use Text Form Edited	*ALL	RI

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

928011	Item Master Information	
Action Code		
Item ID	Item Desc000000000000000000000000000000	
Item Type	000000000000000000000000000000000000000	
Unit of Measure 00000 Item Code 001 Item Code 002 Item Code 003 Item Code 004 Item Code 005		
	P24=More Keys	

Field Default Values

The following are field defaults in SDA:

Field	Explanation	
VD - Screen Display field	Output only	
	You can enter a B in the Field Use field to override the default and change it to both input and output.	
	 No Editing 	
	If you enter B in the Field Use field, the Edited field defau Y. The Condition Indicators default to Y and the next ava editing indicator is assigned to that field.	
VTX - Screen Text field	• 16 bytes long	
	 Defaults to Row description rather than column description 	
VC0 - Screen Constant field	 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.

92590	Design Aid Exit/Save
Save DDS (Y/N)	
Member ID File ID Src Library	
Description Function Code	
Return to Edit (Y/N)	N
	P12=Previous

Field	Explanation
Save DDS (Y/N)	Saves the DDS and updates or creates Vocabulary Overrides and Function Key definitions.
Member ID	The record of the Software Versions Repository member to be copied.
	Screen-specific information
	Name of the screen.
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	Figure 18–16	Software	Versions	Repositor	v screen
--	--------------	----------	----------	-----------	----------

	Bolceale	Versions R	epository		
Punction Use Install System . Reporting System Base Member Name Maint/RSTDSP . Copy Data (Y/N). O Source Obj P Library Lib	V928200 Item Search DSPF Video Displa 113 Inquiry 92 Computer Ass 92 Computer Ass 928200 1 1 Omit Option.	isted Desi isted Desi Pil. Gen Com SAR V _Number	gn e Prefix eration Sev . mon File ersion S D ID <u>C P</u>	N User	Date <u>Modified</u> 11/04/91

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

4038 Allen, Ray Jr. 4039 Allen, Marilyn 4037 Allen, Cindy 4039 Allen, Marilyn 4036 Allen, Cindy	09DBDDep/Ben Addition & Review Action Code I Dep/Ben No <u>4037</u> Alpha Name <u>Allen, Cindy</u>
4035 Allen, Cindy 4037 Allen, Cindy 4038 Allen, Ray Jr. 4037 Allen, Cindy 4039 Allen, Marilyn	Date Of Birth. <u>06/13/48</u> SSN. <u>432-51-2468</u> Dep/Ben Status Memo/Address <u>2525 E. 11th Avenue</u> Denver, Colorado 80206
Opt:1=Single Assignment	F3=ExitF6=Return_w/ValueF24=More_Keys 2=Add/Rev D/B F4=Detail F21=Print F24=More_Key

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 Line u equalize length of input row descriptions	p Line up fields VC0 fields of row descriptions	
09332 Action Code	Single D/B Relation Entry	
Smployee Number	4036 Name . Allen, Cind	
Relationship Data: Dependent or Beneficiary . Relationship Dep/Ben Type Percent Allocated	C Child Primary Beneficiar	r.
Dependent/Beneficiary Data: Social Security Number Date Of Birth Dep/Ben Status	524-58-5113 04/01/72	
Memo/Address Info	2525 E. 11th Avenue Denver, Colorado 80206	
F5=D/B Relationships	F21=Print F	24=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 H	Intry	
Action Code. Employee Number. Plan ID. Dependent/Beneficiary No Effective From	_	Name Thru		
Relationship Data: Dependent or Beneficiary . Relationship Dep/Ben Type Percent Allocated	2			
Dependent/Beneficiary Data: Social Security Number Date Of Birth Dep/Ben Status Memo/Address Info				
F5=D/B Relationships		F21=Print	P	4-More Keys

Spacing

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

Figure 18–20 Standards for Spacing Screen Elements

 ffect From

Separate column headings with one space.

Figure 18–21 An Example of Separating Columns



 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 <u>90</u> Type of Year <u>C</u> Dates:
Employee <u>6001</u> Soc Sec No . 798-52-5841 Benefit Grp. Business Unit 9	Allen, Raymond An Energy Deleted Interes	Birth 10/20/58 Orig. Hire . 12/15/88 Started 12/15/88 Terminated .
O P Plan Name	Effective From Through	. Contributions . Employee Employer
Dependent Care Reimb. Plan ID: DEPCARE Pr Life Insurance) .

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

Figure 18–23 Indenting Fold Areas

2	Plan Name	From	Iffective Through	. Contri Employee	Butions . Employer
	Dependent Care Reim	Account		present first data to	
		Provider/Trustee:			
- 1	Life Insurance		90 12/31/90		
	Plan ID: LIFE	Provider/Trustee:	State Mutual	Insurance Co	mpany

 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 Busines:			Started Terminated .
0	Plan Name	Effective	. Contributions .
2		From Through	EmployeeEmployer

• Insert a blank line between header and subfile information.

Figure 18–25 Separating the Header and Subfile Rows

```
069116 Pay Type Specifications
```

• 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

92520 Scree			Record For	mats List			
Opt	Pornat Name	Type	Fast Path File	Start / End Lines	Related Record	<pre># Fields <u>Selected</u></pre>	F1d Pfx
1	V928200C	SFLCTL	F92801	001 006	V928200S	000	VD
-	V928200S V9282001	RECORD		007 022 024 024		000	ND SF ND
-		1					Ξ
-							_
-							
-							
-							Ξ
-							
-							
-	· · · · · · · · · · · · · · · · · · ·						_
-							_
-							-
-							_
-							
Opt :	1=DB Field Se	election	3=Field List	4=Delet	e 5=Format	Keywords	

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

Field	Explanation	
Opt	Enter the appropriate number to indicate you want to select one of the following values:	
	 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	Screen record format.		
	The format name will be the screen ID followed by a specific suffix value. Typically, the suffix values are:		
	 subfile control format 		
	 subfile format 		
	 record format 		
	If additional formats are required, each format name must be unique so new format suffix values must be assigned.		
Туре	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. <u>BBBBBBBBBBB</u>	000000000000000000000000000000000000000
0 Item <u>P_NumberDescription</u>	Ship 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

	00000000000000000000000000000000000000	
	000000000000000000000000000000000000000	
Code 1 .	000 Code 2 . 000 Code 3 . 000 Code 4	. 000 Code 5 . 000
<u>B</u> 000000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000
	000 Code 2 . 000 Code 3 . 000 Code 4	
B 00000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000
Code 1 .	000 Code 2 . 000 Code 3 . 000 Code 4	. 000 Code 5 . 000
<u>B</u> 000000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000
Code 1 .	000 Code 2 . 000 Code 3 . 000 Code 4	. 000 Code 5 . 000
<u>B</u> 000000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000
Code 1 .	000 Code 2 . 000 Code 3 . 000 Code 4	. 000 Code 5 . 000
<u>B</u> 000000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000
Code 1 .	000 Code 2 . 000 Code 3 . 000 Code 4	. 000 Code 5 . 000
B 00000000	000000000000000000000000000000000000000	000000000000000000000000000000000000000
Code 1 .	000 Code 2 . 000 Code 3 . 000 Code 4	. 000 Code 5 . 000

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 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 screer	1
--------------	--------	---------	-------------	---

Scree	n: V928200									
Opt.	Format Name	Type	Past Path File	Start / End Lines	Related Record	# Fields Selected	F1d Pfx			
1 	<u>V928200C</u> <u>V928200S</u> <u>V9282001</u>	SFLCTL SFL RECORD	<u>F92801</u>	001 006 007 022 024 024	<u>V928200S</u>	000 000 000				
-							_			
-		7					_			
							_			
-							_			
-		<u> </u>			ST		_			
							_			
-							_			
-										
-							_			
-							_			
-							_			
-							_			
-							_			

The Field Selection List displays.

Figure 18–30 Field Selection List screen

Repo	rt: V928200	57			01		eur	tie	211	 1.0	č			Forma	¢ :	V928	1200	C
Seq	Field Name	Dea	ICT	is	t	lor	a					_	DT	_Size		HDG	R	Use
	QXXIT K01 QXXDS QXXDT QXXQT QXXQT QXXQT QXX001 QXX002 QXX003 QXX003 QXX004 QXX005	Item ID Description . Item Type Date Last Ship Business Unit. Quantity On Han Unit of Measure Item Code 001. Item Code 002. Item Code 003. Item Code 004. Item Code 005.				* * * * * * * * *	* * * * * * * *		* * * * * * * * *	 	* * * * * * * * *		SAASASAAAAAA	802622333333 1152333333	0	1111111111111		

3. 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 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.				
	 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.				

Field	Explanation
Use	Specifies how the data field is to be used on the screen:
	 Input only (I).
	 Output only (O) (default).
	 Both input and output (B).
	 IBM Message field (M).
	 Subfile Hidden (H).

To select database fields using the File Selection List

From the Record Formats List screen:

1. Choose option "1" but do not specify a file.

Figure 18–31 Record Formats List screen

Scree	en: V928200						
Opt	Format Name	Type	Fast Path File	Start / End Lines	Related <u>Record</u>	# Fields <u>Selected</u>	Fld Pfx
1	V928200C V928200S V9282001	SFLCTL SFL RECORD		001 006 007 022 024 024	<u>V9282005</u>	000	VD SE VD
-							
-	<u> </u>						
-	7						
-							
-							
							_
-							
-							
-							_
-							
-							-

The File Selection List displays.

Figure 18–32 Field Selection List screen

92522 Screen: V92	8200	File	Selection List	Format: V928200C
File Name	Library	File Type	Desc	cription
F92801	JDFDATA	PF	SDM Item Master F:	ile
		F3=Exit	F12=Prev Screen	

2. Enter the files from which you want to select fields.

Fields for files requested will be displayed through the Field Selection List screen.

9252 Scre	4 en: V928200	Field	Sele	FCE	ion	L	is	t			Forma	t:	V928	200	c
Seq No	Field Name	Descript	tior	1					-	DT	_Size	100	HDG	₽	Use
	QXXIT K01 QXXDS QXXDT QXXCC QXXQT QXX01 QXX001 QXX002 QXX003 QXX003 QXX004 QXX005	Item ID Description Date Laat Ship Business Unit Quantity On Hand . Unit of Measure . Category Code 001. Category Code 003. Category Code 003. Category Code 004. Category Code 005.	· · ·	* * * *				* * * * * * * *		ASAAA	8 30 26 12 15 3 3 3 3 3 3 3 3	0			11111111111
	F3=Exit	F12=Prev Screen	F	21-	Sel	ec	t i	A11	1						

Figure 18–33 Field Selection List screen

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	. <u>B</u>							
£ £								
Screen: V928200		Selection List	Row	Format Desc L			00C	10
Seq Fields to <u>No Field Name</u> <u>1 OxSXIT 01</u> <u>2 OxSXCC</u>	Item ID. Business Unit.	ription		Size	ō H		R D	BB
No Field Name	Item ID	ription		8	ō H	E R	P	B B B
No Field Name	Item ID	ription		8	ō H	E R	P	B B
No Field Name	Item ID	ription		8	ō H	E R	P	B B -

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

928200	Item Search
Business Un	nit. BBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB
<u>B</u> 00000000 Code 1 . <u>B</u> 00000000 Code 1 . <u>B</u> 00000000 Code 1 . <u>B</u> 00000000 Code 1 .	Description Ship Date Quantity On Hand UM 000000000000000000000000000000000000
Code 1 . B 00000000 Code 1 . B 00000000 Code 1 . B 00000000	OCO Code 2 OOO Code 3 OO Window: Row 001 Col 001 COCOCOCOCOCOCOCOCOCOCOCOCOCOCOCO Browse (Y/N) N N

The following table provides an explanation of the fields in the Format Display Control window.

Explanation				
Controls the display of record formats.				
1 – Format is displayed.				
Blank – Format is not to be displayed.				
Lists the DDS format names for the screen screen.				
All names begin with Screen name				
• Subfile control formats end with C.				
 Subfile formats end with S. 				
• Record (non-subfile) formats end with 1.				
Describes the format type.				
Two 3-digit numbers that define the range (rows) for the DDS.				
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.	
	 Cannot change or access any item while in browse mode. 	

Function Description		
F4	Provides the following:	
	 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:	
	 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 Screen: V928200	Format Keyword Maint	Format: V9282000
	General Keywords	
	PUTOVR (Y/N) N	
	OVERLAY (Y/N)	
	Subfile Keywords	
	Subfile Fold	
	Subfile Clear Y	
	Subfile Next Change $\underline{\mathbb{Y}}$	
	Subfile Page	20

Field	Explanation
PUTOVR (Y/N) The screen record format uses the PUTOVR keyword. C the screen to be erased and redisplayed when a window 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.	
	 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.	
	■ 1 to 9999 inclusive	

Function Description		Function	Description
F13	Displays the Function Key/Opt Definition screen.		
	 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

	ode I	Video Screen <u>V928</u> Video Title Item	200	
Line 24		video ilcie icem	Search	
	-Item Master Inf	ormation F5=Item Mainte	nance F2	4=More Keys
Include Y Y Y Y Y Y Y Y Y Y	Description Exit Program Clear Screen Help Instructi Roll Up/Next R Boll Down/Prev	ecord ious Record	Key/Opt 03 22 HL RU RD	Field #FEOJ #FCLR #FHELP #FROLU #FROLU
A K K K	Field Sensitiv Display Error Display All Fu Item Maintenan Item Master In	Message(s) nction Keys ce	01 07 24 05 01	#PQMRK #FERRD #FKEYS #F01 #S01

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 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:	
	 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	Displays the Indicator Control portion of a simulated program execution screen.
	 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	
Business Unit		00000000
	1 2 3 4 5 6 7 8 9	
0 Item	100000000000	
P_Number	11 9 9 9 9 9 9 9 9 9 9 9	Quantity On Hand UM
B 00000000 00		000000000000000000000000000000000000000
Code 1 . 00 B 00000000 00	$\begin{array}{cccccccccccccccccccccccccccccccccccc$. 000 Code 5 . 000
Code 1 . 00		, 000 Code 5 , 000
B 00000000 00		000000000000000000000000000000000000000
Code 1 , 00	71 0 0 0 0 0 0 0 0 0 0 0	, 000 Code 5 , 000
B 00000000 00	81 0 0 0 0 0 0 0 0 0 0	000000000000000000000000000000000000000
Code 1 . 00	91 0 0 0 0 0 0 0 0 0	. 000 Code 5 . 000
B 00000000 00		000000000000000000000000000000000000000
	Ignore all conditioning _ (Y/N)	
	Reset all indicators _ (1/0)	000000000000000000000000000000000000000
	F3=ExitF12=Prev-Screen	
Code 1 . 000 B 00000000 000	Code 2 . 000 Code 3 . 000 Code	
) Code 2 . 000 Code 3 . 000 Code	

Function	Description	
F16	Displays the List of Defined Fields screen.	
	 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

-	Fmt/Field	Description									Dest	/Col	(Press)	Size	
Opt	FRE7F1010	Description	-	-	-	-	-	-	-	-	Row	CCOT.	TAB		Use
1111111	VTX007 VTX009 VTX011 VTX003 VTX006 VTX008 VTX010 VTX012	Item Quantity P Number On Hand Date									006 007 007 007 007	066 002 004 013	******	30 21 8 30 21 8	00000000
11111	V92801S SHXIT SFSELC SFXIT SFXDS SFXQT	Record Format <u>Item ID - Hidden Fie</u> Selection Exits Item ID Description Quantity On Hand .	:	10100	• • •			:			000 008 008 008 008	004	A A A A A	8 1 8 30 21	HBBBB

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	I	tem Search	
Business Unit. B	BEBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBBB	000000000000000000000000000000000000000	00
<u>E</u> 00000000 000000 Code 1 . 000 0 <u>B</u> 0000000 00000 Code 1 . 000 0 <u>B</u> 0000000 00000 Code 1 . 000 0 <u>B</u> 0000000 000000 Screen: V928200 Dict Name XCC Data Type Å Row/Column <u>3</u> Size <u>1</u> Dft Cursor <u>1</u> Lower Case <u>0</u> OVRDTA <u>0</u> OVRATR <u>0</u>	00000000000000000000000000000000000000	00000 0000000 000000 , 000 Code 4 , 000 00000 0000000 000000 , 000 Code 4 , 000 00000 0000000 000000 , 000 Code 4 , 000 00000 0000000 000000 Definition	Code 5 . 000 0000000000 00 Code 5 . 000 0000000000 00 Format:-V928200C-

Function	Description
F17	Used to define soft coding (Vocabulary Override) fields.
	 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.
	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.

Accesses the Field Definition screen, just as if you had entered an asterisk (*) for the field.

Figure 18–41 Example F17 - Define Soft Coding Fields screen

Ausiness Unit	BBBBBBBB	BBBB 000000000000000000000000000000000	
	· · · · · · · · · · · · · · · · · · ·		
0 Item		Define-Soft-Coding-Fields	
P Number _	Dict		Screen
Code 1 . 0	Name CH	Text Description	Field
B 00000000 0	Manne	TONS NEGRATINAN	VTX001
Code 1 . O	SELC C	0	VTX002
B 00000000 0	SELC D	P	VTX003
Code 1 . O		Business Unit.	+ VTX004
B 00000000 0	XCC R XIT C DL01 C XDT C XOT C XUM C XIT D	Item	_ VTX005
Code 1 . O	DL01 C	Description	_ VTX006
B 00000000 0	XDT C	Ship	_ VTX007
Code 1 . O	XOT_C	Quantity On Hand	_ VTX008
B 00000000 0	XUM_C	UM	_ VTX009
Code 1 . O	XIT D	Number	_ VTX010
B 00000000 0	X001 R	Code 1 .	_ VTX011
Code 1 . 0 B 00000000 0	XDT D	Date	VTX012
Code 1 . 0		P3=ExitF12=Prev	
Code 1 . U		F3eEX1CF12eFrev	

Description
Used to window left.
Note: This function key is applicable only when designing wide screens (132 by 27 rows) on 80 column terminal.
Used to window right.
Note: This function key is applicable only when designing wide screens (132 by 27 rows) on 80 column terminal.

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

1. To access the Record Formats List screen, press F10.

- **2.** Change the starting line number for the subfile form at (VxxxxS).
- 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 (VxxxxC).
- 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 (VxxxxC).
- 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 (VxxxxS).
- 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

928011	Iten Master Information	
Action Code , B		
5. 6.		

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

	Fields to	select	Field Selection List	Row	Format: Desc Ler		:00C	10
Seq No	Field Name		Description	D	Size	HDG	D	Use
1	Ox\$xIT 01	Item ID.		S	8 0	B	131	B
2	Qx\$xCC	Business	Unit	A	12	B	R	旦旦
							-	-
					-		-	-
							-	
					-		-	-
<u> </u>	MA. 10. 1		ts F12=Prev Screen F	16=Field 1			-	-

18.20.1 Options

The following options are available:

- Override Row Description length
- Resequence 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

928011	Item Master Information
Action Code	- B
Item ID Business Unit.	. BEBEEBEE 00000000000000000000000000000
Screen: V928200 Seq Fields to No Field Name 001 0x5xIT 01 002 0x5xCC	o select Row Desc Length <u>10</u> DescriptionDT Size HDG D Use
Seq Fields to No Field Name 001 OxSxIT 01	select Row Desc Length. 10
Seq Fields to No Field Name 001 OxSxIT 01	select Row Desc Length. 10 I
Seq Fields to No Field Name 001 OxSxIT 01	select Row Desc Length. 10

18.21 Process Overview - Revising the Field Definition

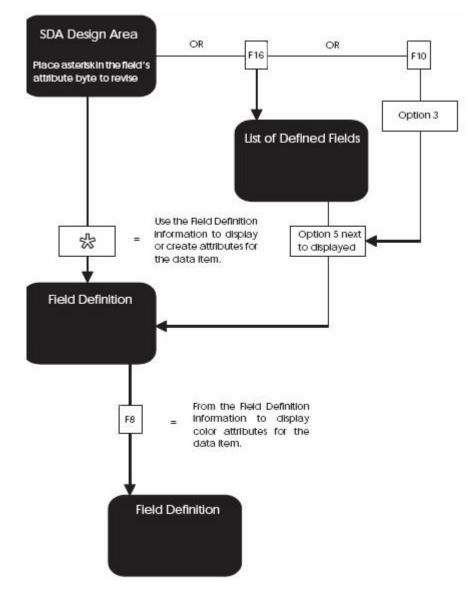


Figure 18–45 Process Flow to Revise the Field Definition

18.22 Process Overview - Revising Vocabulary and Function Keys

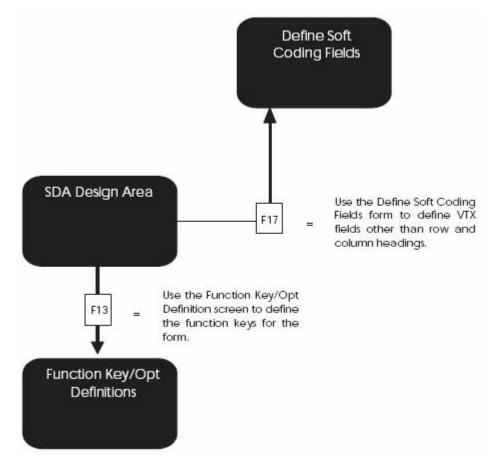


Figure 18–46 Process Flow to Revise the Vocabulary and Function Keys

18.23 Function Keys for Screen and Display Format Control

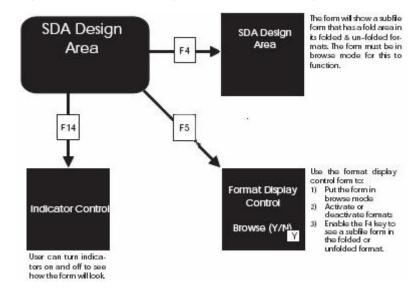


Figure 18–47 Function Keys for Screen and Display Format Control

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

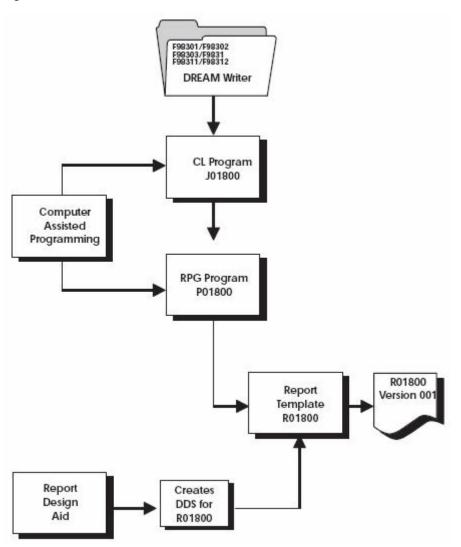


Figure 19–1 RDA and DREAM Writer Process Flows

19.1.2 Comparing RDA and SDA - Field Definition Form

Figure 19–2 SDA Field Definition Form

Dict Name	SXDS	Text	Description	
Data Type	A	Field Name	SFSXDS	Cond Ind
Row/Column	8 _13	Field Use	B	RI Y _44
Size		Text Form		HI Y 44
Dft Cursor	1	Edited	X 44	UL Y N44
Lower Case	Y	Change		ND
OVRDTA		Duplicate	2020	BL
OVRATE		Field Cond		ND
				PC

Figure 19–3 RDA Field Definition Form

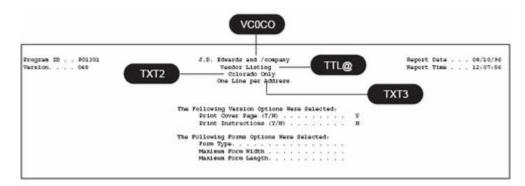
Dict Name SXDS	Text	Descripti	on	
Data Type À Row/Column <u>9 89</u> Size <u>12 </u> Space Before <u>space After</u> Skip Before <u>Skip After</u>	Field Name Field Use Text Form and Ind	RRSXDS Q —	Highlight Underline Field Cond Char per Inch Edit Code Asterisk Fill Float Symbol	<u>Cond Ind</u>

ltem	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



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

			VCOCO			
el4021 Version	····· exe RRTX	2 Vandou	de and Company r Listing	L@ BOD		06/10/96
Address Busher	Hane	Phone	Line2	Line	π	Postal Code
4008	Allied Steel	779-1675	Atts: Andrew Carnegie	4949 S. Syracuse Rovy	00	8011
6805	American General Insurance Co.	(303) 522-7575	1717 Chamber St.	Denver	CO	8028
4004	American Supply Company	(303) 321-5648	2654 Sherman Street	Denver	3333	8013
\$004	Apple Hotel	(303) 773-3733	1234 Marcy Road	Englewood	60	6023
1119	Arapahoe Mospital	773-7355	1476 Arapahoe Road	Englewood	00	0011
4003	Arapahoe Plumbing	(303) 798-1515	c/o Phillips, Andover	25 DTC Center	00	0012
1759	Ashby, Arsold	(303) 643-4132x1611	4329 S. Adams Street	Dermar	333	8012
4976	August, Rodin	(797) 456-2245	P4 Rue de Balrac	Furis	00	
7018	Bank of America		Bo. St. Louis	Denver	00	8032
7211	Bovaird, Georgia	(303) 733-5544	707 Vine Street	Deciver	00	8028

The following table provides the field names and a description of each.

Field Explanation	
VC0CO	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?

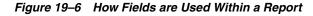
The first step in designing a new report is determining the format of the report. You should account for all lines of information on the report to correctly define the formats needed and their size.

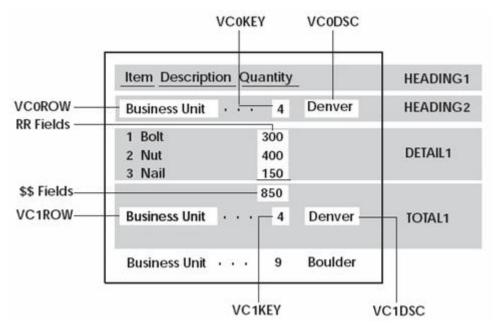
FORMAT	FIELD	DESCRIPTION		
Any format	*VTX	Assigns the first available VTX name to the field		
	*VC0	and gets a description from the Data Dictionary that you can change.		
		Assigns the first available VC0 field and assigns a default size of thirty.		
HEADING1 -	VTX001	The default VTX field which prints the row		
contains the standard fields to be printed	*PAGE	description, "Page"		
fields to be printed on the top of every page	VTX002	The default special field that inserts the DDS keyword PAGNBR in the source and retrieves		
	*DATE	the current page number on the report.		
	VC0CO	The default VTX field which prints the row		
	RRTTL@	description, "Date -".		
	RRTXT2 & RRTXT3	Special field that retrieves today's date.		
		The name of the default company 000, it displays on the first line of each page.		
		Default Title from Vocabulary Overrides.		
		DREAM Writer overrides that correspond to the second and third header lines of the report.		

FORMAT	FIELD	DESCRIPTION
HEADING2 -	VC0ROW	Data Dictionary row description of the level
contains the	VC0KEY	break field.
subheading fields used to describe the	VC0DSC	The value of the level break field.
level break detail that is to follow		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	VC1ROW	Data Dictionary row description of the level
the total line fields	VC1KEY	break field.
	VC1DSC	The value of the level break field
	\$\$XXX	The description of the level break field
	ψψισστ	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.





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 SKIPA.

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	Repositor	У		
Action Code. Member ID Description. Punction Code System Code. Reporting Syy Base Member 1 Maint/RSTDSP Copy Data (1)	<u>R9284(</u> <u>Invent</u> <u>PETE</u> <u>161</u> <u>92</u> <u>92</u> <u>10</u>	Computer An Computer An Computer An	les ports sisted De sisted De F <u>S</u> G	sign sign ile Prefix eneration	 Sev .		
0 Source P Library	Object		SAR 				Date <u>Nodified</u> 10/26/94
Opt: 1=Bro	wae 2=Edit	3=Copy 5=SJ	AR 0-Print	9=D1t 10=	Desig	n 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

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.

928400	00000000000000000000000000000000000000
Business Unit Description	It Sel Format-Display-Control Sel Format Type Boundaries 1 HEADINGI REPORT 001 008 1 DETAILI REPORT 009 009 1 TOTALI REPORT 010 011

Figure 19–9 Example F5 - Format Display Control

Field	Explanation	
Sel	Selection.	
	Controls the display of record formats.	
Format	Lists the DDS format names.	
	Valid format names are:	
	 HEADINGn 	
	 HEADINGn+1 	
	 DETAILn 	
	 TOTAL1 	
Туре	Describes the DDS format type.	
	Always REPORT or SFORMS in RDA.	
Boundaries	Two 3-digit numbers that define the range (rows) for the DDS.	
	 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.

928400	00000000000000000000000000000000000000
Business Unit Description	It Ty Description 985001Repository-Services "1" Available Services - Data Dictionary - Menus - Vocabulary Overrides - Function Key Definitions - Processing Options - User Defined Codes - User Defined Codes - Edit System Helps - CASE Profiles - SAR Log Inquiry - Coy DD.Vo.DW.UDC.SI.Menus -Sel:"1"=SelectF12=Previous

Figure 19–10 Example F6 - the Repository Services portion	Figure 19–10	Example F6 -	the Repositor	y Services	portion
---	--------------	--------------	---------------	------------	---------

Function Key	Description
F10	Displays the Record Formats List form.

Figure 19–11 Example F10 - the Record Formats List screen

R928400 ormat Name EADING1 ETAIL1 OTAL1	Type REPORT REPORT REPORT	Fast Path File	Start / End Lines 001 008 009 009 010 011	Related Record	# Fields <u>Selected</u> 000 000 000	Fid Pfx RE RE SS
ETAIL1	REPORT	P92801	009 009		000	RR RR SS
						_
						-
	-DB Field S	-DB Field Selection	-DB Field Selection 3-Field List	=DB Field Selection 3=Field List 4=Delet	-DB Field Selection 3-Field List 4-Delete 5-Format	=DB Field Selection 3=Field List 4=Delete 5=Format Keywords

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	Enter the appropriate number to indicate you want to select one of the following values:
	File/field pick list of ampersand functions.
	File/field pick list for fast path functions.
	List of defined fields in the format.
	Delete format.
	Record format keywords.
Format Name	Report record format.
	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.
Туре	Record format type, usually REPORT.

Field	Explanation
Fast Path File	The data base 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.
Fld Pfx	Screen field prefix to be used for the video fields: RR, \$\$.

Note: There should be no gaps between the end line of one format and the start line of the next format. If you make changes to the positioning of a format and leave a gap between formats, RDA will automatically adjust the end lines for you.

Function Key	Description
F14	Displays the Indicator Control form.

Example F14 - the Indicator Control form

Figure 19–12 Example F14 - the Indicator Control screen

928400	Indicator-Control	Inventory by Business Unit
Business Unit 0000000000000	1 2 3 4 5 6 7 8 9 1 0 0 0 0 0 0 0 0 0 0 0 0 0 11 0 0 0 0 0 0 0 0 0 0 0 0 21 0 0 0 0 0 0 0 0 0 0 0 0 31 0 0 0 0 0 0 0 0 0 0 0 0 0 41 0 0 0 0 0 0 0 0 0 0 0 0 0 51 0 0 0 0 0 0 0 0 0 0 0 0 51 0 0 0 0 0 0 0 0 0 0 0 0 51 0 0 0 0 0 0 0 0 0 0 0 0 51 0 0 0 0 0 0 0 0 0 0 0 0 51 0 0 0 0 0 0 0 0 0 0 0 0 51 0 0 0 0 0 0 0 0 0 0 0 0 51 0 0 0 0 0 0 0 0 0 0 0 0 51 0 0 0 0 0 0 0 0 0 0 0 0 51 0 0 0 0 0 0 0 0 0 0 0 0 51 0 0 0 0 0 0 0 0 0 0 0 0 51 0 0 0 0 0 0 0 0 0 0 0 0 51 0 0 0 0 0 0 0 0 0 0 0 0 0 51 0 0 0 0 0 0 0 0 0 0 0 0 0 51 0 0 0 0 0 0 0 0 0 0 0 0 0 51 0 0 0 0 0 0 0 0 0 0 0 0 0 0 51 0 0 0 0 0 0 0 0 0 0 0 0 0 0 51 0 0 0 0 0 0 0 0 0 0 0 0 0 0 51 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 51 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 51 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 51 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Description 000000000000000000000000000000000000

Use this form to turn on/off selected or all indicators to see the resulting print image.

Function Key	Description
F16	Displays the List of Defined Fields form.

Fmt/Field	Description	-	Row/Co	21 7	IVR .	Size	_	Us
	Record Format REP							
						6		0
	Company Name					40		0
	Page No				A			0
	A				1.1	4	0	0
						40		8
	Date	* . T			<i>n</i>	14		~
	Drogessing Option Text					40	0	000000000000000000000000000000000000000
						40		ŏ
						12		ŏ
						2		ŏ
						8		ŏ
VTX011					A.	.8		ŏ
	HEADING1 *LITER VCOCO VTX001 *PAGE RRTTL# VTX002 *DATE RRTXT3 VTX003 VTX006 VTX009	HERDING1 Record Format REP *LITER VC000 Company Name VTX001 Page No	HEBDING1 Record Format REPORT *LITER VC000 Company Name VTX001 Page No	HEBDING1 Record Format REPORT *LITER 001 00 VC000 Company Name 001 00 VTX001 Page No 001 11 *PAGE 001 00 VTX002 Date	HERDING1 Record Format REPORT *LITER 001 003 VC0C0 Company Name 001 003 VTX001 Page No	HEBDING1 Record Format REPORT *LITER 001 003 VC0C0 Company Name 001 003 VTX001 Page No	HEBDING1 Record Format REPORT *LITER 001 003 6 VC00C0 Company Name 001 046 A 40 VTX001 Page No. 001 112 A 12 *PAGE 001 125 4 40 VTX002 Date	HEADING1 Record Format REPORT *LITER 001 003 6 VC000 Company Name 001 004 A 40 VTX001 Page No 001 112 A 12 *PAGE 001 025 4 0 RRTTL# Inventory by Business Unit 002 0246 A 40 VTX002 Date 002 112 A 12 *DATE 002 125 6 0 PETTT2 Descensing Option Text 003 146 A 40

Figure 19–13 Example F16 - the List of Defined Fields screen

Function Key	Description
F17	Used to maintain vocabulary override fields.

Figure 19–14 Example F17

928400			00000000000000000000000000000000000000	iness Un 000000000	it 0000
Business Unit 0000000000000	Dict Name PACN DATE XCC XCC XTY XTY XTY XTY XIT XIT XIT XDT XDS	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Text Description Page No. Date - Business Unit Description Item Type Description Item Number Ship Description - P3=ExitF12=Prev-	Screen <u>Field</u> VTX001 VTX002 VTX003 VTX004 VTX005 VTX005 VTX006 VTX007 VTX009 VTX010 VTX010 VTX011 VTX012	- 0 00

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	e Versions	Repositor	Y		
Action Code. Member ID. Punction Code Punction Use System Code. Reporting Sys Base Member N Maint/RSTDSP Copy Data (Y/	. <u>R92840</u> . <u>Invent</u> . <u>PETE</u> . <u>161</u> . <u>92</u> tem <u>92</u> ame <u>P92840</u> . <u>1</u> Om	ory by Cost Printer Fil Simple Ro Computer Au Computer Au	les eports ssisted De ssisted De P	sign sign ile Prefix eneration		N	
O Source P Library JDFSRC71 14 STB301SRC	JDFOBJ71		SAR <u>Number</u> <u>834451</u> 241883				Date Modified 10/26/94 07/19/95

 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

3	Printer File Parameters
Member ID	R928400
Forms Length	068
Forms Width	132
Lines/Inch (4/6/8/9) .	<u>8</u>
Char,/Inch (10/15)	15
Overflow Line	062
Align Forms	и
Form Type	<u>*STD</u>
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

SEU==>>					P55011X
**	*********	*** Beginning	of data *******	*	*********
001.00	H/TITLE	P55011X -	Item Information	Update	
0002.00	H				
0004.00	н	and the leave	1003		
0005.00	8* 3	opyright (c) . D. Edwards	& Company		
0006.00	8.	e pre promote des	a confront?		
0007.00	H*	This unpub	lished material :	is proprietary to	
0008.00	н.	J. D. Edwa	rds & Company. 1	All rights reserved.	
00.00.00	H.	The method	s and techniques	described herein are	10 C
0010.00	H.	considered	trade secrets a	nd/or confidential. on, in whole or in pa	
0012.00	H.	is forbidd	on or distribution	ress written permissi	ion.
0013.00	H*		dwards & Company		
0014.00					
0015.00	H*				the second second second second
0016.00	F*				
F3=Exit	F5=Refres	h F9=Retrie	ve F10=Cursor	F12=Cancel	
	at find			4 M M - COMPANY C M	

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

SEU==>>					P55011X
FHT **	t	+ 2	+ 3+	. 4+	5+ 6+ 7
0027.00	PPA AAA			D.T.O.F	
0028.00		IF E UF E	K	DISK	
0029.00	PF5501X		<i>h</i> .	DISK	KINFDS SPVEDS
0034.00	P+	BCPY, DOOD			outine - C0001
0035.00 0036.00 0037.00 0038.00 0039.00 0040.00	B	GRAM TABLE	IS AND ARRAYS	•••••	

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

SEUe=>>				- C		P550113
FMT **	anter las	: * *	1.3.1114111	. 4.	1117111.5.1	
0040.00	Be	OGRAM TABLES A	UR ADDANO			
0041.00	8* PR E*	OURAM TABLES A				
0043.00						
5044.00	E E E E	2	MK d	4	4	Error Mag
0045.00	2				1	Error Mag
0046,00	R				4	Error Mag
0047.00	E			10	1	Dflt Wrk
0048,00	E*		S			and a state
0049.00	E* E* E* Co					
0050.00	E* Co	py Member for	Composite (Comps	on Subrouti	ne - C0001
0051.00	E.					
0052.00	E/COPY J	DECPY, E0001				
0053.00	E++++++					*****************
	PS:Refrest	F9=Retrieve	P10=Curr	ior	P12=Cance	1
F3=Exit		P24=More ke				

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

SEU==>> FMT ** 067.00 068.00 069.00 070.00 071.00	 		SPECIFICATIONS	4 5 AND DATA STRUC	P55011X + 6 + 7 TURES
0072.00 0073.00 0074.00 0075.00 0076.00 0076.00 0078.00 0079.00 0080.00 0081.00 0081.00	TXT	DS		41 58 VT 81 92 VT 121 138 VT 161 178 VT 201 218 VT 281 298 VT 281 298 VT	X001 X002 X003 X004 X005 X006 X007 X008 X009 X009
F3=Exit F16=Repe	6 - 13 - 13	F9=Retri F24=More o retriev	keys		RYAL

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 SEU==>>	4.4.4	· *	71	Browse		DEVSRC/JDESRC P55011X
FMT **	· · · · * · · · · 1	in a na	+ 2	+ 3 +	4 5 .	
0098.00	C*	MAT	NLINE PROG	RAM		
0099.00	0000	***		site set also		
0100.00	C*					
0101.00	C*	Pro	cess house	keeping.		
0102.00	C.*					
0103.00	C			RXCR . C999		
0104.00	C.					
0105.00	C*	1000	220000 00000			
0106.00	****	If	LR on, end	program.		
0107.00	C*					
0108.00	C.		*INLS	CAREQ'1'	EGI	
0109.00	******					
0110.00	C.			4 4 2		
0111.00	C.	11	automatic	inquiry set, p	process inquir	Y+
0112.00	C.				12122	2275
0113.00	C		SAUTO	CASEQ'1'	\$003	24
0114.00	C.			the last sit day day	the set as the	
			120000000000000000000000000000000000000	and an and a second second	ne warnenen	
F3=Exit	F5=Refr	esh	F9=Retri		or F12=Cance	1
F16=Repe	eat 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

SEU	1		Browse		DEVSRC/JDESRC P55011X
FMT **		1+ 2 .		4	6+ 7
334.00	CSR		MOVE '0026'		Inv MCU
335.00	CSR		MOVE '0027'	EMK, 09	Inv Desc Ttl
336.00	C				
337.00	C.		a constant of the second		
338.00	C* C*	Load invali	d action code arr	ay.	
339.00	CSR.		MONTON A		
340.00	CSR		MOVEA	wouve:	
341.00	Cran				
342.00	C* C*	Load system	A		
344.00		road shares	Cate-		
345.00	CSR		TIME	SWRK12 120	
346.00	CSR		MOVE SWRK12	SSEDT 60	
347.00	Ct		NOAR SWELFE	99801 60	
348.00	CSR	END94	9 ENDSR		
349 00			************		
350.00	OISS		UNLOCK		
220100		VAN D	OPTIPO SES		
F3=Exit	F5-Def	reah F9-Ret	rieve F10=Curso	r F12=Cancel	
		F24=Mc		e e e e controle s	

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.

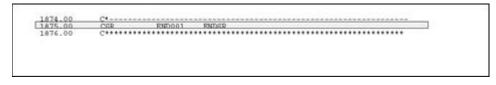
Standard subroutine code lines are identified in positions 7 and 8 with SR. Their names always begin with an S. Subroutines are separated by a single line of asterisks. Major blocks of code within a subroutine are separated by a single line of dashes.

Figure 22–1 Standard Subroutine Code Lines

870,00 871,00 872,00	CSR CSR CSR		MOVE	*BLANK *BLANK *BLANK	HRJBCD HRJBST HRRVW	
873.00	CSR		END	- Driversit	DALK Y H	
875.00	CSR	END001	ENDSE			
876.00		**********	******			
877.00	C*	BROUTINE SOC)3 - Edi	t Key		
879.00	C: 50 C: 50					

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



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*
733.00	C* Copy Common Subroutine - Right Justify Numeric Fields
734.00	C+
735 00	C/COPY JDECPY C0012
736.00	2

This example shows how the COPY statement in the source (above) brings in additional code to the compiled source.

73400	C+						
73500	0/0	OPY JURCEY, COOLS					
0000000+		MRER COO12 IN FILM	JDECPY LIBRARY	/ JDFSRC	OPENED	POR /COPY.	
	C++						
0000200+	C+ .	This is part of a	composite com	non subry	out ine.	In	
0000300+		order for the sul	proutine to work	COTTect	tlv. th	10	
0000400+		RPG program must					
0000500+		E0012, C0012					
0000700+		MAINLINE PROGRA	LM				
00008000+							
0000900+							
0001000+							
Q001100+		SUBROUTINE CO.	12 - Right Just	SEV Num	eric Fi	elda	
0001200+						a des per los des	
0001300+							
0001400+		PURPOSE					
0001500+							
0001600+		To provide a	aubroutine cos	mon to .	all pro	orams which	
0001700+			ies numeric fie				
Q001800+						ited by either a	
0001900+		leading or t	railing minus	im. T	his res	tine also ignores	
0002000+			ric characters				
0002100+			the placement of				
0002200+		GOODERATION (the Processie of		Crosser 3		
0002300+		REMARKS					
0002400+		Free Werstan					
0002500+							
0002600+		Prior to exe	cuting this sul	moutime	data f	ros an	
0002700+			input field al				
0002800+		named 'sNM'	with a 'MOVEA'	conmand.	The	right justified	
0002900+			vailable from th				
Q003000+			ich is a 15 digi				
0003100+		CAUTION: The	argest number	r that o	an be h	andled	
0003200+			outine is 999,1				
Q003300+		However, the	input field ma	V conta	in only	15	
0003400+		number o.	and a second in			0.0598.51	
0003500+							
0003600+		C0012	BROSE				
0003700+			in the second second				
0003800+							
0003900+			Z-ADD0	#NUMR	299		
0004000+			Z-ADDO	#NUMR2		Compile only	
0004100+			Z-ADD0	#NUMR9		Compile only	
0004200+				an state			
0004300+			MOVEAGEN	BALNON			
0004400+			CAREO*BLANKS	EN0012			
0004500+		In Product Synthesis	MOVE *ALL'O'	#ALNUM	10 m 1		

Figure 22–4 Results from Copy Statement Above

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	1.1	1 14	Brow	ee.		DEVSRC/JDESRC P55011X
040.00	E	******	************			
041.00	E.	PROGRA	M TABLES AND AR	RAYS		
042.00	E*			an our an our		
043.00	* *	0.50240.4025				
044.00	B		EMK	64	4	Error Møg
045.00	8		aMK	64	1	Error Meg
046.00	_ <u>K</u>		aRR.	64	4	Error Mag
047.00	E		ΦDV	40 10 40 10	1	Dflt Wrk
048.00	E		@AV @40	10	10	Allowed Values
049.00	B		@40	40	1	Allowed Values
050.00	B.,		@10	10	1	Allowed Values
051.00	E.					
052.00	E.					
053.00	00 00 00 00 00 00 00 00 00	сору м	lember for Compo	site co	mon supre	Sucine = C0001
054.00						
055.00	E****	A DDRCB	Y,E0001			
056.00	E+					
057.00	E.	A	and an enter			
059.00	E+	сору и	lember for Compo	sice cos	mon supre	300100 = 00012
060.00						
060.00	B/00P	I ODBCP	Y,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.

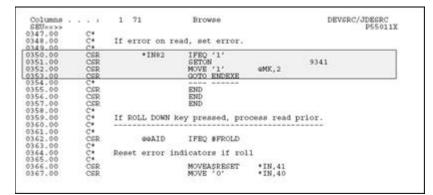
Columns SEU==>>	1	1 71	Browse	DEVSRC/JDESRC P55011X
279.00 C		If Display err	ors pressed. ex	it to error messages.
280.00 C	*	about the second second		
	SR	@@AID	IFEQ #FERRD	
	SR		Z-ADD1	80
	SR		Z-ADD1	#G #B
	SR	#G	DOWLE64	192
	52	eMK, #G	IFEO '1'	na seconda de la companya de la comp
287.00 C	SR		MOVE EMK, #G	@ER,#H
288.00 C	SR		ADD 1	#8
289.00 C	SR		END	
290.00 C	SR		ADD 1	#G
291.00 C	SR		END	
292.00 C	SR		CALL' PO000E'	98
				10070
	SR		PARM	922
295.00 C	SR		GOTO ENDEXE	
297.00 C	SR		END	
298.00 C				

Figure 22–6 Call to the Error Message Handling Program

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



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

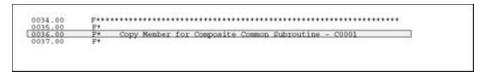
0016.00 0017.00 0018.00 0019.00	P* F*	PROGRAM REVISI	ON LOG			
0019.00 0020.00 0021.00	P* P* P*	Date	Programmer	Nature of Revi:	sion	
0022.00 0023.00	AUTHRP . F*	03/18/93 05/01/93	MARTIN RIPPEY	SAR # 00000005 SAR # 00167542	(AS/400	A/G)

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
```



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 0131.00 0132.00	C*	\$998	CASED' '	\$998	
0132.00 0133.00	C* C		END		

DON'T WRITE: If \$998 is blank, execute \$998.

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



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

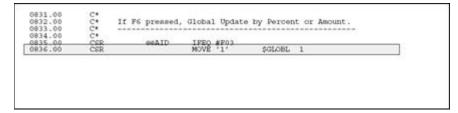
Then define \$\$ANS:

*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



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.

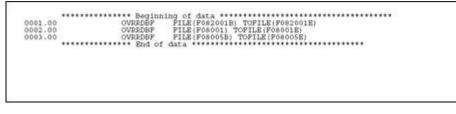
1 71 JDFSRC/JDESRC P08320 Columns . . 4 Browse 3825.00 3826.00 3827.00 3828.00 3829.00 C* C* CSR CSR CSR CSR CSR CSR Check for existence of pension files. OPEN F085201 IPEQ '0' MOVE '1' SPENS 1 END 9.9 *IN99 3830.00 3831.00 3832.00 OPEN F08501LA IFEQ '0' MOVE '1' 3833 .00 CSR 99 3834 .00 *IN99 SPENS2 1 3836.00 END CSP

Figure 22–13 Lines that Open Files

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



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 subfles primarily from the Mainline.

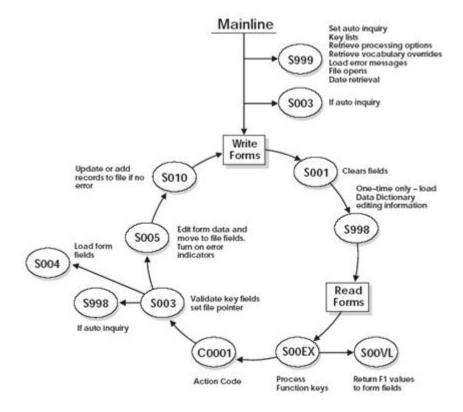
Name	Description
SOOEX	Processes all function key exits.
	 Calls J96012 if F24 was pressed
	 Calls X96CCX if F1 was pressed
	 Calls subroutine S00VL if F1 was pressed after X96CCX was called
	 Calls P0000E if F7 was pressed
	 Calls P00HELP if the HELP key was pressed
	 Calls subroutine S001 if F22 was 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.
	 Usually only clears key fields and VC0 fields if F22 (Clear) is pressed
S002	Checks for level breaks for reports.
	 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.
	 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.
	 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:
	 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
	 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)
	 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







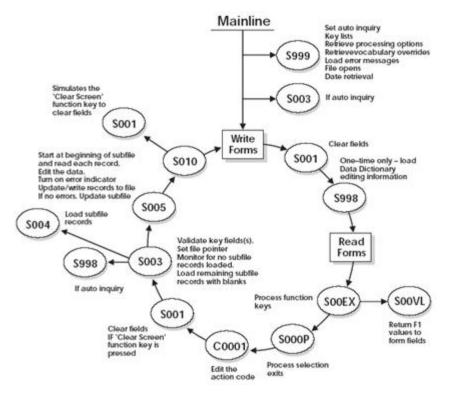


Figure 23–2 Subfile Program with Selection Exits

Report Program without Subheadings

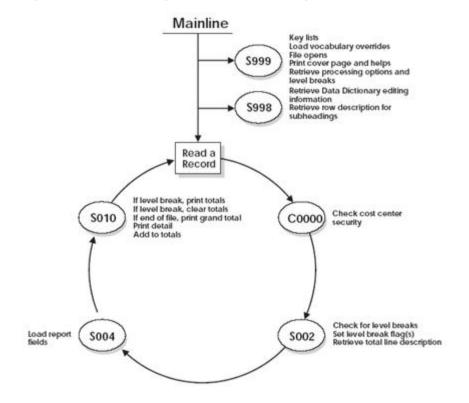


Figure 23–3 Report Program without Subheadings

Report Program with Subheadings

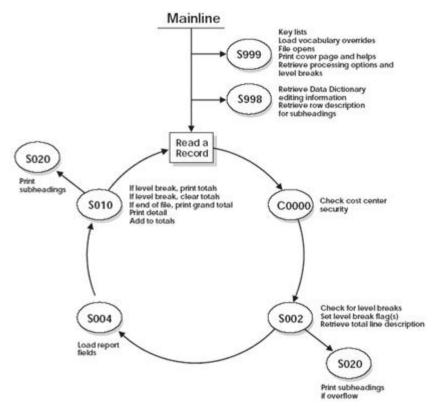


Figure 23–4 Report Program with Subheadings

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.

1.00 H/TITLE P928011 Iten Master Information 2.00 H*	used to make (/400 A/G) — changes to the program
3.00 H* 4.00 H* 5.00 H* 6.00 H* 7.00 H* 5.00 H* 7.00 H* 9.00 H* 1.00 F* 1.00 F* 1.0	A Shows all SARs used to make changes to the program
4.00 H* 5.00 H* 7.00 F* 7.00 F* 7.0	A Shows all SARs used to make changes to the program
5.00 H* 6.00 H* 7.00 F* 7.00 F* 7.0	Can be changed through the Program Generator Shows all SARs used to make changes to the program
6.00 H* 7.00 H* 7.00 H* 7.00 H* 9.00 H* 9.00 H* 1.00 F* 1.00 F* 1.0	Can be changed through the Program Generator Shows all SARs used to make changes to the program
7.00 H* This unpublished material is propriatery to 8.00 H* J. D. Edwards & Company. All rights reserved. 9.00 H* The methods and techniques described herein are 10.00 H* considered trade secrets and/or confidential. 11.00 H* Expreduction or distribution, in whole or in part, 12.00 H* is forbidden ercept by express written permission 13.00 H* of J. D. Edwards & Company. 14.00 H* Expreduction or distribution, in whole or in part, 15.00 H* FORGRAM REVISION LOG 18.00 F* PROGRAM REVISION LOG 19.00 F* Date Programmer 12.00 F* Date Program Type 23.00 F* 12/07/93 QUARLES SAR # 241883 (As 24.00 F* B0010 - Standard Maintenace Program Type This program provides the standard single for processing for adding, changing, deleting 27.00 F* inquiring into data records as requested 28.00 F*	Can be changed through the Program Generator Shows all SARs used to make changes to the program
8.00 H* J. D. Edwards & Company. All rights reserved. 9.00 H* The methods and techniques described herein are considered trade secrets and/or confidential. 11.00 H* Exproduction or distribution, in whole or in part, is forbidden except by express written permission of J. D. Edwards & Company. 11.00 H* Exproduction or distribution, in whole or in part, is forbidden except by express written permission of J. D. Edwards & Company. 14.00 H* Expreduction or distribution, in whole or in part, is forbidden except by express written permission of J. D. Edwards & Company. 14.00 H* Expreduction or distribution, in whole or in part, is forbidden except by express written permission of J. D. Edwards & Company. 14.00 H* Expreduction or distribution, in whole or in part, is forbidden except by express written permission of J. D. Edwards & Company. 14.00 H* Expression of J. D. Edwards & Company. 15.00 H* Expression of J. D. Edwards & Company. 16.00 F* Date Programmer Nature of Revision of Expression of Program Type 20.00 F* Boolo - Standard Maintenace Program Type 23.00 F* This program provides the standard single for inquiring into data records as requested. 26.00 F* Exprodusing for adding, changi	Can be changed through the Program Generator Shows all SARs used to make changes to the program
9.00 H* 10.00 H* 10.00 H* 10.00 H* 10.00 H* 11.00 H* 12.00 H* 13.00 H* 13.00 H* 15.00 H* 15.00 H* 15.00 H* 15.00 H* 15.00 F* 16.00 F* 17.00 F* 19.00 F* 20.00 F* 22.00AUTHEF* 22.00AUTHEF* 23.00 F* 24.00 F* 24.00 F* 24.00 F* 24.00 F* 25.00 F* 22.00AUTHEF* 23.00 F* 24.00 F* 24.00 F* 24.00 F* 25.00 F* 25.00 F* 26.00 F* 26.00 F* 27.00	Can be changed through the Program Generator Shows all SARs used to make changes to the program
10.00 H* considered trade secrets and/or confidential. 11.00 H* Reproduction or distribution, in whole or in part, is forbidden encept by express written permission of J. D. Edwards & Company. 13.00 H* is forbidden encept by express written permission of J. D. Edwards & Company. 14.00 H* 15.00 H* 16.00 F* 17.00 F* 18.00 F* 19.00 F* 20.00 F* 21.00 F* 22.00AUTHEF* 12/07/93 23.00 F* 24.00 F* 25.00 F* 26.00 F* 27.00 F* 28.00 F* 29.00 F* 20.00 F*	the Program Generator Shows all SARs used to make changes to the program
11.00 H* Reproduction or distribution, in whole or in part, is forbidden except by express written permission of J. D. Edwards & Company. 14.00 H* is forbidden except by express written permission of J. D. Edwards & Company. 14.00 H* is forbidden except by express written permission of J. D. Edwards & Company. 14.00 H* is forbidden except by express written permission of J. D. Edwards & Company. 14.00 H* Is forbidden except by express written permission of J. D. Edwards & Company. 14.00 H* Is forbidden except by express written permission of J. D. Edwards & Company. 16.00 H* Is forbidden except by express written permission of J. D. Edwards & Company. 16.00 F* PROGRAM REVISION LOG 19.00 F* Date Programmer 20.00 F* Date Programmer 21.00 F* 12/07/93 QUARLES SAR # 241003 (As 23.00 F* Boolo - Standard Maintenace Program Type This program provides the standard single 24.00 F* Inquiring into data records as requested. 28.00 F*	Shows all SARs used to make changes to the program
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13.00 H* of J. D. Edwards i Company. 14.00 H* 15.00 H* 16.00 F* 17.00 F* 18.00 F* 19.00 F* 20.00 F* 21.00 F* 22.000 F* 23.00 F* 24.00 F* 25.00 F* 26.00 F* 27.00 F* 28.00 F* 27.00 F* 28.00 F* 29.00 F* 20.00 F* 24.00 F* 25.00 F* 26.00 F* 26.00 F* 27.00 F* 28.00 F* 29.00 F*	used to make (/400 A/G) changes to the program
14.00 H* 15.00 H* 15.00 F* 17.00 F* 17.00 F* 19.00 F* 20.00 F* 22.00AUTHRF* Date 23.00 F* 24.00 F* 24.00 F* 25.00 F* 26.00 F* 27.00 F* 28.00 F* 29.00 F* 20.00 F* 12/07/93 QUAPLES SAR # 24.00 F* 24.00 F* 25.00 F* 26.00 F* 27.00 F* 28.00 F*	used to make (/400 A/G) changes to the program
15.00 H* 16.00 F* 17.00 F* 19.00 F* 20.00 F* 21.00 F* 22.00AUTHRF* 12/07/93 23.00 F* 24.00 F* B0010 - Standard Maintenace Program Type 25.00 F* 26.00 F* B0010 - Standard Maintenace Program Type 25.00 F* 27.00 F* 27.00 F* 29.00 F*	used to make (/400 A/G) changes to the program
16.00 F* 17.00 F* 18.00 F* 19.00 F* 20.00 F* 22.00AUTHRF* Date Programmer 23.00 F* Il/07/93 QUARLES 23.00 F* Il/07/93 QUARLES SAR # 241003 25.00 F* Dolo - Standard Maintenace Program Type 25.00 F* This program provides the standard single 27.00 F* inquiring into data records as requested. 28.00 F* Secondary Seconda	used to make (/400 A/G) changes to the program
17.00 F* PROGRAM REVISION LOG 18.00 F*	used to make (/400 A/G) changes to the program
18.00 F* 19.00 F* Date Programmer Nature of Revision 21.00 F* Date Programmer Nature of Revision 21.00 F* 12/07/93 QUARLES SAR # 241083 (As 23.00 F* 12/07/93 QUARLES SAR # 241083 (As 24.00 F* B0010 - Standard Maintenace Program Type (As 25.00 F* This program provides the standard single (As 27.00 F* inquiring for adding, changing, deleting 28.00 F* Solo Solo 29.00 F* Solo Solo	used to make (/400 A/G) changes to the program
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24.00 F* B0010 - Standard Maintenace Program Type 25.00 F* This program provides the standard single 26.00 F* processing for adding, changing, deleting 27.00 F* inquiring into data records as requested 28.00 F*	cycle
25.00 F* This program provides the standard single 26.00 F* processing for adding, changing, deleting 27.00 F* inquiring into data records as requested. 28.00 F* 29.00 F*	cycle
26.00 F* processing for adding, changing, deleting 27.00 F* inquiring into data records as requested. 28.00 F* 29.00 F*	
27.00 F* inquiring into data records as requested. 28.00 F* 29.00 F*	- SDCI
28.00 F* 29.00 F*	
29.00 F***********************************	Generator puts in
	numeric order. AFC
31.00 FF0001 IF E K DISK	opens from bottom
32.00 FF92801 UF E K DISK	A to top so JDE puts
33.00 FV928011 CF E WORKSTN KINFDS SKVFDS	
34.00 P***********************************	files at the bottom.
35.00 _2*	mes at me bottom.
36.00 F* Copy Member for Composite Common Subroutine - C0001	
37.00	
38.00 F/COPY JDECPY, D0001	A 1.1.2 (
39.00 F***********************************	Informational
40.00 E**********************************	data structure
41.00 E* DROGRAM TABLES AND ARRAYS	for the video
42.00 E*	for the video
43.00 E*	
44.00 E EMK 64 4 Error Mag A	rrays that handle
45.00 E GMK 64 1 Error Meg er	for messages
46.00 E GER 64 4 Error Mag	
47.00 E GDV 40 1 Dflt Wrk	
48.00 E GC 256 l Literal Work	
49.00 E*	11/11 1 1 1 1 1 1 1 1 1 1 1
50.00 E* 51.00 E* Copy Member for Composite Common Subroutine - C0001	Will copy in additional
	specifications for copy
	module C0001
53.00 E/COPY JDBCPY, E0001	
54.00 E	
55.00 E*	
56.00 E* Copy Member for Composite Common Subroutine COOl2 57.00 E*	
57.00 E* 58.00 E/COPY JDECPY, E0012	
55.00	
60.00 E*	
60.00 E* 61.00 E* 61.00 E* Copy Member for Composite Common Subroutine - C997	
60.00 E* 61.00 E* Copy Member for Composite Common Subroutine - C997 62.00 E*	
55.00 E 60.00 E* 61.00 E* Copy Member for Composite Common Subroutine - C997 62.00 E* 63.00 E/CODY JDECPY,E997	
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55.00 E* 60.00 E* 61.00 E* Copy Member for Composite Common Subroutine - C997 62.00 E* 63.00 E* 64.00 E* 65.00 I**	
55.00 60.00 E* 61.00 E* Copy Member for Composite Common Subroutine - C997 62.00 E* 63.00 E* 64.00 E* 64.00 E* COPY JDBCPY,E997 64.00 E* COPY JDBCPY,E997	

Figure 23–5 Maintenance Program without a Subfile (part 1)

14	Data Structur	re to Load Video S:	oreen Text			
IDSTX	77 D.S		1000			
1			1 10 VTX0			
I			41 38 VIXO			
1			91 92 VTX0 121 139 VTX0		E. A. LUENC	2
i			161 178 VTX0			field is 40 lon
ī			201 219 VTX0		but may not	
1			241 259 VIXO	007	Pulls in text	
1			291 299 VIXO		Vocabulary	Overrides.
I.			321 338 VTX0			
I			361 378 VIX0 401 418 VIX0			
2			441 459 VINO			
			401 499 VIXO	112		
I			521 536 VIX0			
I			561 576 VIX0 601 616 VIX0			
-			541 656 VIXO			
1			681 696 VIXO			
1			721 726 VTX0	119		
I			761 776 VTX0			
I			901 916 VTX0 941 956 VTX0			
÷ .			PRI PPS VIND			
÷			921 926 VING			
÷			pei pre vixo			
1*		- Defe	structure for o	name on be	mod indexes	
1/005	Y JDRCPY TOODEIN		structured use			
1/005	Y JDECPY, 100PERS	De la Prover	am status data			
1.		r regi	Second Property Collector		-	
1.4						
 	Come Martha	ine Comparing Com	a hereit			
1.	copy weaper :	for Composite Commo	on suproutine	- could		
I/COP	Y JDRCPY, IOORC	Data stra		2012 N. 1997		ion losses
		a desta desta	ichire for yocal	bulary ow	errides and funct	DUIL NO YO
Issau			ichire for vocal	bulary ove	erndes and tunch	iun se ya
1			ichire for vocal	bulary ove	erndes and tunch	кш ксуч
1. 1.		or Server - X0005	ichire for voca	bulary ow	erndes and tunch	itili ke ya
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1.	Copy Neeber fo 7 JDECPY, 200050	or Server - X0005] Data stru				un seys
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1* 1* 1/009 1* 1* 1/009 1* 1*	Copy Member f: Y JD2CPY, 100050 Copy Member f: Y JD2CPY, 100044 Copy Member f: Y JD2CPY, 199042	or Server - X0005 Data stri cr Server - X0006 1 or Server - X00008	ucture for file s	erver X0(005	
G. G. I,005 I	Copy Member f: Y JD2CPY, 100050 Copy Member f: Y JD2CPY, 100044 Copy Member f: Y JD2CPY, 199042	or Server - X0005 Daia sira or Server - X0006 1 or Server - X00008	ucture for file s	erver X0(005	ini ac pi
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C C C C C C C C	Copy Member fr 9 JERCEY, 100050 Copy Member fr 9 JERCEY, 100064 Copy Member fr 9 JERCEY, 199068	or Server - X0005 Data stri cr Server - X0006 1 or Jerver - X0008 HMM	ucture for file s	erver X0(005	
C. C. C. C. C. C. C. C. C. C. C. C. C. C	Copy Member f: 2 JDBCBY, 200550 Copy Member f: 9 JDBCBY, 200064 Copy Member f: 9 JDBCBY, 100058 MAINLINE PHOS	or Server - X0005 Data stri cr Server - X0006 1 or Jerver - X0008 HMM	ucture for file s	erver X09	005	
1,000 1,0000	Copy Member f: 2 JDBCBY, 200550 Copy Member f: 9 JDBCBY, 200064 Copy Member f: 9 JDBCBY, 100058 MAINLINE PHOS	or Server - X0005 Data stri cr Server - X0006 1 cr Jerver - X00008 NAM temping.	ucture for file s	erver X04	005	
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11111111111111111111111111111111111111	Copy Member f: 2 JDBCBY, 200550 Copy Member f: 9 JDBCBY, 200064 Copy Member f: 9 JDBCBY, 100058 MAINLINE PHOS	or Server - X0005 Dafa sirv or Server - X0006 1 or Server - X00008 1 1 1 1 1 1 1 1 1 1 1 1 1	ucture for file s	erver X04	005	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Copy Member f: Y JDRCPY, 100050 Copy Member f: Y JDRCPY, 100066 Copy Member f: Y JDRCPY, 199008 MAINLINE PROG Process house	Dr Gerver - X0005 Dafa sirv Dafa sirv or Gerver - X0000 1 or Jerver - X0000 1 magnetic Excent group program.	ucture for file s	erver X04	005	
11111111111111111111111111111111111111	Copy Member f: Y JDECRY, 100050 Copy Member f: Y JDECRY, 100064 Copy Member f: Y JDECRY, 199002 MAINLINE PROG Procese house If LR on, end	or Server - X0005 Dafa sirv or Server - X0006 1 or Server - X00008 1 1 1 1 1 1 1 1 1 1 1 1 1	ucture for file a	erver X04	005	
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Copy Member fr Y JERCEY, IODODO Copy Member fr Y JERCEY, IODODA Copy Member f Y JERCEY, IDEODA MAINLINE PROG Process housed If LR on, end *INLR	CX SETVER - X0005 Data sire Data sire Data sire X0006 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	One tim function	erver X04	005	
	Copy Member fr Y JERCEY, IODODO Copy Member fr Y JERCEY, IODODA Copy Member f Y JERCEY, IDEODA MAINLINE PROG Process housed If LR on, end *INLR	CX SETVER - X0005 Data sire Data sire Data sire X0006 1 X0006 X006 X006	One tim function	erver X04	005	
	Copy Member fr Y JERCEY, IODODO Copy Member fr Y JERCEY, IODODA Copy Member f Y JERCEY, IPROVE MAINLINE PROV Process housed If LR on, and "INLR If evtomatic	or Server - X0005 Data sire or Server - X0006 1 or Server - X00008 NAM SCOR S999 Program. CABR2'1' 	One tim function acc er inquiry.	erver X00	005	
	Copy Member fr Y JERCEY, IODODO Copy Member fr Y JERCEY, IODODA Copy Member fr Y JERCEY, IDEODA MAINLINE PROG Process housed If LR on, end *INLR	CX SETVER - X0005 Data sire Data sire Data sire X0006 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 1 0 0 1 0 0 0 0 0 0 0 0 0 0 0 0 0	One tim function acc ex inquiry.	server X00	005	passe d to this
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Copy Member fr Y JERCEY, IODODO Copy Member fr Y JERCEY, IODODA Copy Member f Y JERCEY, IPROVE MAINLINE PROV Process housed If LR on, and "INLR If evtomatic	or Server - X0005 Data sire or Server - X0006 1 or Server - X00008 NAM SCOR S999 Program. CABR2'1' 	One tim function acc er inquiry.	erver X00	005	passe d to this atoma fica lly
	Copy Member fr Y JERCEY, IODODO Copy Member fr Y JERCEY, IODODA Copy Member f Y JERCEY, IPROVE MAINLINE PROV Process housed If LR on, and "INLR If evtomatic	CABD2'1'	One tim function acc ex inquiry.	erver X00	005	passe d to this atoma fica lly
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Copy Member fr 2 JERCPY, 100050 Copy Member fr 2 JERCPY, 100064 Copy Member fr 2 JERCPY, 199062 MAINLINE PROG Process housed If LR on, end -INLA If submatic	CABD2'1'	One tim function acc ex inguiry.	erver X00	005	passe d to this atoma fica lly
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Copy Member fr 2 JERCPY, 100050 Copy Member fr 2 JERCPY, 100064 Copy Member fr 2 JERCPY, 199062 MAINLINE PROG Process housed If LR on, end -INLA If submatic	Data stru Data s	One tim function acc ex inguiry.	erver X00	005	passe d to this atoma fica lly
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Copy Member fr M JDBCPV, 100000 Copy Member fr Y JDBCPV, 100004 Copy Member fr Y JDBCPV, 100004 MAINLINE PROU Process housed If LR on, and "INLA If avtomatic Begin normal p	CABEQ'1' CABEQ'1' CABEQ'1' FOR Processing	One tim function acc ex inguiry.	erver X00	005	passe d to this atoma fica lly
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Copy Member fr 2 JERCPY, 100050 Copy Member fr 2 JERCPY, 100064 Copy Member fr 2 JERCPY, 199062 MAINLINE PROG Process housed If LR on, end -INLA If submatic	Data stru Data s	One tim function acc ex inguiry.	erver X00	005	passe d to this atoma fica lly
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Copy Member fr M JDBCPV, 100000 Copy Member fr Y JDBCPV, 100004 Copy Member fr Y JDBCPV, 100004 MAINLINE PROU Process housed If LR on, and "INLA If avtomatic Begin normal p	CABEQ'1' DOMEQ'0'	One tim function acc ex inguiry.	erver X00	005	passed to this atoma fica lly

Figure 23–6 Maintenance Program without a Subfile (part 2)

250.00	C :		MR.ITEV9290111		
151.00	c		MOVE '1'	GEAID	
152.00	č.		EX65 6001		
153.00	C*			-Clears fields	
154.00	C*		and the second second second		
155.00	C*	Load data fiel	ld dictionary paras	seters (one cvc)	le only).
156.00	C*			· · · · · · · · · · · · · · · · · · ·	
157.00	C	\$999	CASEQ' '	\$996	One time only. Pulls in Data
159.00	C*	0.0			Dictionary editing information
159.00	C		END		functions
160.00	C*				
161.00	C*	Begin video	screen read process	aing.	
162.00	C*				
163.00	C		GRTOF		999201
164.00	C		READ V929011	- 100 (SD 06)	9999
265.00	C		Z-ADD0	842.3.ON	
166.00	C		Z-ADD1	\$\$3C0L	Tells where the cursor is.
167.00	C*	1.0			the second second second second
169.00	C*	If video real	d timed out, and p	rogram.	
	C*			and a state of the second	12/23
170.00	C.	*1899	CARBQ'1'	803	LA
171.00	C*	66AID	CARRONPEOJ	807	LX
		Sevin			4475.
173.00	C*				
174.00	C*	76	ction key pressed,		
175.00	C*	an Asiza bull	way pressed,		
	e.	*1815	1000 254	All function	in keys are assigned indicator 15 so
177.00	c	-1815	IFRO '1' EXER GOORX		function key has been pressed
179.00	C*		SARA SUVEA	and the standy in	
179.00	C.	*INLS	CABRQ'1'	80.7	
191.00	C*		Cheng 1		
191.00	e.	*1815	CAREQ'1'	200	
192.00	č.	1012	Chang, 1	2010	
194.00	c		END		
195.00	e.		180 B		
195.00	G.	Edit the act	the second		
197.00	C*	BOIL COM BOC.	son code.		
199.00	e.		SXGR CODD1	- Edits th	e action code.
199.00	C*		ALES COUPS	Checks	action code security.
190.00	C*			C. I.C. Cat.	activities of the main of the
191.00	C*	the send of sub	b requested, and po		
192.00	C*	ar and or los	o rednescent and b	- order man -	
192.00	ē	GGAID	CARROFFEOJ	807	
194.00	G+				
295.00	C*				
196.00	C*	If clear surv	een requested, pro:	cess and return	
197.00	C*				
199.00	C	GEAID	IFEQ #FCLS		
199.00	ē.,		RX65, 6001		
200.00	C*				
201.00	ē.		GOTO END		
202.00	C*				
202.00	C .		END		
204.00	C*				
205.00	C*	Load subfile	records.		
205.00	C*			Sets the	file pointer and calls S004
207.00	C .		EXER GOD3		he video/report fields
209.00	C*			and and and a	and the second second
209.00	C*		23		
210.00	C*	If add or chi	ange, validate all	video input.	
211.00	C*		_		If an error has not
212.00	C	+1893	CAREQ'O'	8005	occurred, validates and
213.00	C*				
214.00	C .		END		edits data
215,00	C*				
216,00	C*	If no errors	and not inquiry, t	update file.	
217.00	C*			15. (PAPER 1943)	
219.00	C .	*11893	IFEQ '0'	-	
219.00	C	*1824	Cheng'o'	8010	Updates files
220.00	C .				- opunea mea
221.00	C		END	SS - 28	
222.00	C		END		
223.00	C*				
226.00	C*	Seturn for ne	ext input.		
224.00	C*		en en en el 🕷 el en el el		
	C*				
225,00		END	TAG		
226.00	C	10.00	19414		
	0 0 0				

Figure 23–7 Maintenance Program without a Subfile (part 3)

	C*	Set correct :	nesesge in line 24.			
220.00	C*					E-1-11-24
221.00	C C	*1893	IFEQ '1' NOVELEVL24E	VDL24		Sets the message for Line 24
233.00	č		FLOR	Virginite		
234.00	c		NOVELOVI.24M	VDL24		
225.00	ē.		23D	(
236.00	C*	-				
237.00	C		END			
228.00	C*					
229.00	C	LOZ	TAG			
240.00	C*					
241.00	C*					
242.00	C*	END MAINLINE				
243.00						
245.00	C*					
246.00	C*	Conv Common i	Subroutine - Edit Ac	ston Code		
247.00	C*	and a summer of				
249.00	C/C021	JDECPY, COOOL				
249.00	C			************	******	**
250.00	C*					
251.00	C*	SUBSOUTINE S	000X - Process Punct	ion Keys		
252.00	C.					
252.00	C*					
254.00	C*	Processing:	 Determine func Process function 	tion key prese	ed.	
255.00	C*		2. Process functi	on key request.	÷	
256.00	C* CER	geogy.	PROPE			
259.00	Cax.	racosr	PROM.			
259.00	Cas	TOOEXA	TAG			
260.00	C*			Custoine	and the	and the second second
261.00	e*-					inction key
262.00	C*	IE 200 reques	sted, exit subroutin	was press	ied by t	he user
262.00	C*	-	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			-Values assigned in the
264.00	CER	GIASS	CARRONPROJ	REDGER	LS	
265.00	C*					Function Key Definitions
266.00	C*					hrogram
267.00	C*		eye pressed, exit to		and re	turn.
269.00	C*					
269.00	C* CBR	BEATD	IFRQ #FERTS			
271.00	Cas	and the	CRIT , bbenin,			
272.00	C*					
272.00	CON		PARM	TODEC		
274.00	CRN		PARM	GRVFDG		
275.00	CER		PASM	DOOCER.		
276.00	C*					
277,00	CER	GEAID	CARNEWFERTO	TOOSXA		
279.00	C*					
279.00	CSR		GOTO ENDEXE			
290.00	C*					
291.00	CER.		END			
292.00	C.			1		
292.00	C*	It Cursor Get	neitive Help Presed	, exit to CS He	•-P.	
294.00	a*					External mours and start
296.00	COR	GRAID	IPRO MPONEX			External programs start
297.00	CER		HOVER*IN	## 25F		with an X. This is the curse
299.00	CGR		CALL 'X96CCX'		98	sensitive help program
299.00	C*					
290.00	CER		PARM	2006C		
291.00	CER		PARM	GRVPDG		
292.00	CER		PARM	DOOCER.	-Par	ameters passed identifying
292.00	CGR		PASM ' '	HHCCPP 2		re the cursor was when Fl wa
294.00	CER		PARM	DOMDE		med
295.00	C* CGR		IFSE *BLASSE		Inc	2023
		**FLOX				
297.00	CER		EXER BOOVL			
299.00	Cas		NOVEANNIN	* 157, 1		
299.00	CRR		NOVER##IN END	- 100, 1		
301.00	Cas		NOVEL * BLANKE	#SDTAI		
	CER		GOTO ENDEXE	10000		
202.00			GOTO ENDERE			
302.00	C*					
			SND			

Figure 23–8 Maintenance Program without a Subfile (part 4)

305.00	C.	If Display er	rors presse, exit t	o error besseg	6 # .
307.00	C*				
309.00	CGR.	GGAID	IFEQ #FERSO		
310.00	CER		E-ADD1	#0	
211.00	CER		Z-ADD1	#12	
312.00	CGR	#G	DOMLE64		
313.00	CG3.	AMX, #G	IFEQ '1'		
224.00	CGR.		MOVE ENK, HG	42X, #12	
215.00	CER.		ADD 1	#H	
216.00	CER.		END 1	**	
219.00	CER		ADD 1	*9	
319.00	CER		CMTT , 500005.		99
220.00	C*		CPALL PUOPUR		24
221.00	CER.		DATE	625	
322.00	CGR		GOTO ENDEXE		
323.00	C* CER				
324.00			END		
325.00	C*				
326.00	C*		pressed, exit to he	lp facility an	d return.
329.00	C*				
329.00	C* CER	GEAID	IPEQ #PHELP		5 5235 AL
329,00	CER	GEALD	CALL 'POONNLP'		Access JDE program leve
221.00	C*		CPLIE PUTRILIP		Help information
332.00	CER		RASIM	HERE	
229.00	CGR.		RARM	11200	
234.00	CGR.		PARM	10040	
335.00	CER.		PARM	SULAND	
337.00	CGR		GOTO ENDEXE		
229.00	C*				
239.00	CGR.		END		
241.00	C*	+5 -1	en pressed, clear s		90.9
342.00	C*	IT UIGHT FOTO		creen and retu	
242.00	C*				
244.00	CER.	GEAID	IFRO #FCLS		
345.00	CER		EXER GOD1		
345.00	C*				
247.00	008		GOTO ENDEXE		
349.00	C*				
349.00			END		
250.00	C*	Process coll up	and down have		
352.00	C*	Process roll up			
252.00	C*				
254.00	CUR	deAID	1FEQ #FROLD		
255.00	CER	GGAID			
356.00	CER	\$42008	DOURD, ,		
257.00	CGR		MOVE / /	SEECUR 1	
358.00	C*				
359.00 259.00 260.00 361.00	C*		pressed, process re		
360.00	C*				
362.00	C*	883.1D	IFEO #FROLU		
262.00	C*	Sevin 1	read associat		
364.00	C*	Resat error ind	icators if coll		
265.00	C*	22400.5000.403.60363			
266.00	CGB		MOVEASREET	*18, 41	
267.00	CER.		MOVE '0'	* IN, 40	
369.00	CUR		SETOF		919299
369.00	CSR	Costopor	READ 192901		9991
370.00	CER.	*1991	IFRQ '1'		
371.00	CER.	SHUREY	GETLLI92901 GETOF		6299
272.00	CAR		SEADI92901		9992
374.00	C*		SUMPLYINGT		2222
375.00	C*	If error on rea	d, sat error.		
375.00	C*		~~ 신신 것 같은 사람		
277.00	CER	*1992	11' gave		
279.00	CER		SETOR .		9241
279.00	CGR.		MOVE '1'	dMX, 2	
290.00	CER.		GOTO EMDEXE	1640404	
391.00	C*				
392.00	CGR.		END END		
292.00					

Figure 23–9 Maintenance Program without a Subfile (part 5)

205.00	C*		0.000000000000000000000000000000000000	Nacional States	
286.00	C*		pressed, process re		
287.00	·C*				
288.00	·C*				
289.00	CGR	GEAID	IFEQ SPROLD		
290.00	·C*	1			
992.00	C*	Reset error indi	cators if roll		
992.00	C*				
192.00	CGS		HOVEASREET	* 255,41	
294.00	CGR		HOVE '0'	*18,40	
195.00	CGX		SETOP		919299
00,349	CGR		READ9192901		9991
297.00	CGR	*IN91	19902 '1'		
999.90	CGR	\$5.0KEY	CETTLLI92001		
00.995	CG8.		ERTOF		8299
00.00	CGR		READ9192901		9992
01.00	C*				
02.00	C*	If error on read,	set error.		
02.00	C*				
104.00	CGR	*1892	1982 '1'		
05.00	CG3.		SETON		9741
06.00	CGR		HOVE '1'	WMK,2	
07.00	CER		GOTO ENDEXE		
00,00	C*				
00.90	CGR		END		
10.00	CON		END		
122.00	CG2		DISID		
122.00	C*.				
12.00	C*	Load video scree	n data on roll keys.		
14.00	C*				
15.00	C*				
16.00	CGR	00A1D	IFER #FROLU		
17.00	CGR	BEAID	OREQ SPROLD		
19.00	C*.				
19.00	Č*	Release record 1	lock or report record	in use.	
20.00	C+				
21.00	CGR	*1899	1990 '0'		
22.00	CRR		RECEPTUNILOCK		Denne and the Party of the Part
22.00	CRR		FLOR		Program that will displa
24.00	CER		CALL 'PPSRLCK'		P1 record lock window wh
25.00	C*		Chan Presser		a necord in use error is
26.00	CER		DARM	WWPDDG	e ncounte red
27.00	005		SETON	A R R R R R R R R R R R R R R R R R R R	9241
129.00	CGR		HOVE '1'	GMX, 6	2342
29.00	CER		GOTO ENDEXE	mund a	
20.00	C*		GOTO ENDERE		
120.00	CER		END		
171.00	CBA.		and		
22.00	C.				
		Sector Sector Sector	and and and and		
124.00	C* C*	Cost Center secu	micy adic.		
	CGR.		MOVEL'F92901 '	8271.2	
35.00	CRR		NOVEL PPIPUL	#PILE #NCU	
			MOVELOXXOC	#MCC	
28.00	CBR	#AUT #FAUT	IPSE '1' ANDNE'1'		
		#PANT			
40.00	C95.		EXER COODD		
41.00					
42.00	CGR		END		
42.00	CGS.	#AUT	IFNE '1'		
44.00	CGR	#FAOT	ANDNE'1'		
45.00	CGR	#MAUT	ANDNE'1'	100000000	
46.00	CEX		NOVE '1'	SERCUR	
47.00	CRR	260352233	EGID		
49.00	CBR	\$42000	Cheng' '	6004	
49.00	C*.				
50.00	CGR		200D		
51.00	·C*				
152.00	CGS		END		
52.00	C*				
154.00	CGR		END		
155.00	CGR		GOTO ENDEXE		
156.00	c*.				
157.00	COR		END		
59.00	C*	-	24/22/2		Could not find a match in
59,00	CGR	GIAGE	IPSE '1'		
60.00	CRR	12.000	SPTON	0192	the Function Key Definition
61.00	COR		GOTO ENDEXE		for the function key presse
62.00	C*				so program displays Invalia
63.00	CER		END		
					Function Key message.
64.00	-C*				annound on a meaninger

Figure 23–10 Maintenance Program without a Subfile (part 6)

466.00	C				
467.00	C*				
469.00	C*	Copy Cosson Sub	coutine - Cost Cent	er Security Check	
459.00	C*			CONTRACTOR AND AND AND ADDRESS	
470.00		Y JD#CPY, C0000			
471.00	C++++				
	_				
472.00	C*				For cursor sensitiv
472.00	C*	SUBBOUTINE SGOV	L - Cursor Control	Return Values	 help. Information
474.00	C*		ale also and and any first and the provide they take and and the first also a		
475.00	C*				retrieved in progr
476.00	C*	By format, find	the field to updat	e and move in the a subfile, the record	X96CCX. The
477.00		raturned value	of the formet in	a ambfile, the record	retrieved informat
477.00		the observed the for	and in manage	a success, the second	te a leved intermina
478.00	C*	co coange te to	and in www.pp.		is returned to the
478.00					video fields in this
490,00	CER	SOCVL	BROGR.		
479.00 490.00 491.00 492.00	C*				subroutine.
492.00	C*				
492.00 494.00 495.00	CER	##RVAL	IFEQ '*BLANK		
494.00	CER		NOVE "BLANK	新新35.VOAL	
495.00	CER		RND		
405.00					
407.00		Return an local d	or fields in forest	US200111	
	200	Automatic Versions 1	A LINCOT IN COTAN		
495.00 497.00 499.00 499.00	C# CER	1112000000000			
499.00	CER	***.57**	IFRQ 'V\$200111'		
490.00	C*				
491.00 492.00 493.00	CGR	##71.00		10	
492.00	CER		MOVEL ##RVAL	ACTION	
492.00	CER		GOTO ENDOVL		
494.00 495.00 495.00 497.00	C# CER C*				
408.00	000		END		
102.00	CHIL		and the second s		
430.00		0.022333388		A	
497.00	CGR	**75.08	IPRO 'VDXIT	Concernant I	
A 10 10 10 10 10	CER.		NOVELSENVAL	VDOLTT	
499.00	CER		GOTO ENDOVL		
500.00	C#X				
501.00	CGR		END		
502.00					
502.00	C* CSR	##72.03	IFEQ 'VDXDG		
504.00	CER	11 11 1 404-01	NOVELWWWAL	VDXDd	
505.00				Victoria .	
595.00	CER		GOTO ENDOVL		
505.00	C*				
507.00	CER		END		
509.00	C* CSR				
507.00 509.00 509.00 510.00 512.00	CGR	*****	IFRO 'VD200	A CONTRACTOR	
510.00	COR		NOVELWWRVAL	VDXCC	
512.00	CER		GOTO ENDOVL		
512.00	C*				
517.00	CUR		250		
514.00	Card.		- 80 U		
	C* CSR	1.000			
515.00		##72,08	INDO ,ADKLA		
516.00	CER		MOVELSERVAL	VDOLTY	
517,00	CER		GOTO ENDOVL		
519.00	C*				
519.00	CER		END		
520.00	C*		1 Paramana		
521.00	CGR	**71.08	SPRQ 'VOXOT	· · · · · · · · · · · · · · · · · · ·	
522.00	CER	8 8 F 1 L 0	MOVELSENVAL	VDXDT	
522,00	CER		GOTO ENDOVL	Tardora	
	- m pt.				
524.00	C*				
525.00	CER		25KD		
525.00	C*				
527.00	CGR	##71.00	TOXOV' QUEL	2	
529,00	CER		NOVELSENVAL	VDXQT	
529.00	CUR		GOTO ENDOVL		
520,00	C.a.				
531.00	467.		END		
532.00	C*		100 million - 100 million - 100 million		
		and the second			
522.00	CER	**92.08	SIPRO 'VOXUM		
524.00	CER		MOVEL SERVAL	VEXTM	
535.00	AEP.		GOTO ENDOVL		
536.00					
527.00	CER		2ND		
539.00	C*				
539.00	CGR.	##101.7M	IFEQ 'VERODI	80	
		H H F 445-08			
540.00	CER		MOVEL SERVAL	VDX001	
541.00	CER C*		GOTO ENDOVL		
542.00					

Figure 23–11 Maintenance Program without a Subfile (part 7)

542.00	CER		END			
544,00	C.					
545.00	CER.	9971,000	TABO ,ADX005	1.423223		
545.00	CER		MOVEL##RVAL	VDX002		
547.00	CER		GOTO BHDOVL			
549.00	C*					
549.00	CER		IND			
550.00	C*					
551.00	CER	**FLOS	IPBO 'VDK003	38		
552.00	CER		NOVEL##SYAL	VDX003		
552.00	CER		GOLO SHDOAF			
554.00	c*					
555.00	CER		EMD .			
555.00	C*					
557.00	CER	**71,000	IFEQ 'VDX004	(Margarana)		
559.00	CER		MOVEL##RVAL	VD0004		
559.00	CGR		GOTO SHEDOVL			
561.00	CER		END			
562.00	C*					
362.00	CER	**71.00	IFEQ 'VENCOS	CH		
564.00	CER.		NOVELBERVAL	V00005		
565.00	CER		GOTO BHDOVL			
566.00	C*					
567.00	CER		2HD			
568.00	CER		BHD			
569.00	c*					
570.00	C#2.	ENDOVL	ENDER.			
571.00					********	
572.00	C.		and the second second			
572.00	C*	SUBBOUTINE 2003	- Clear Fields			
\$74.00	C*					
\$75.00	C*					
576.00	C*	Processing: 1	Reset all video	ecrean and a	data file	fields
\$77.00	C*		for next traneed	stipe.		
579.00	C*	2	. Clear action cos	ie only if re	quested.	
579.00	C*					
580.00	CER	6001	DOCES.			
591.00	C*					
592.00	C*					
592.00	C*	Report fields fo	r next transaction.			
594.00	C* .				C1	I the fields in the
585.00	CUR	* NOTICE Y	CL235192901			
596.00	CER		MOVE "BLANK	###CPL	record f	ormat for F92801
597.00	CER		MOVE *PLANE	###CR.C		
599.00	CER		Z-ADD-ZERO	##BCOL		
589.00	CER		Z-ADD'2230	##330W		
599.00	CER		MOVE *BLANK	VEXCC		
591.00	CER		NOVE *BLANK	VOUDG		
592 00	CER		NOVE "BLANK	VEXET		
593.00	CER		NOVE "BLANK	VEXIT		
594.00	CER		NOVE "BLANK	VDXOT		 Clears the video fields
					10	Ciencia the video acida
595.00	CER		MOVE *BLANK MOVE *BLANK	VDXTY VDXUM		
595.00	CER		MOVE *BLANK MOVE *BLANK	V0X1M V0X001		
598.00	CGR		MOVE *BLASS	VDX002		
599.00	CER		MOVE *BLANK	V0X003		
600.00	CER		NOVE *BLANK	VD000-4		
601.00	CER		MOVE *BLANK	V00005		
602.00	CER		NOVELEVL24M	VDL.24		
602.00	CER		NOVE · ·	61837	1	
604.00	C*		200			
605.00	C*	Clear action co	ode only if clear ac	reen action.		
605.00	C*				-	
607.00	CER	GEAID	IP2Q SPCLS			
609.00	CER	A Second Second	MOVE *ALL'O'	\$3.RGET		These fields will only be
609.00	CER.		MOVESREET	*18,41		
610.00	CER		MOVE / /	ACTION	1	cleared if the user presses
611.00	CUS		Z-ADD*ZENO	QXXIT	1993	the function key to clear
	CER.		MOVE *BLANK	VC0001	-	the screen. We want to
612.00	CER		MOVE *BLAHK	VC0002		
612.00	CER		NOVE *BLANK	VC0003		save certain information
617.00			MOVE *BLANK	VC0004		like key fields and
617.00 614.00	CER		NOVE "BLANK	VC0005		descriptions so they don't
617.00 614.00 615.00	CER			WC0004		
617.00 614.00 615.00 616.00	CER			1,0000		get de ared everytime S001
813.00 814.00 815.00 816.00 817.00	CER. CER.		NOVE *RLANK	10000-0-0-0		Ber mennen everkente store
617.00 614.00 615.00 616.00 617.00 618.00	CER CER CER		MOVE *BLANK	VC0007		is executed.
617.00 614.00 615.00 616.00 617.00 618.00 619.00	CER CER CER		MOVE *BLANK MOVE *BLANK	VC0009		
613.00 614.00 615.00 616.00 617.00 619.00 619.00 620.00	CER CER CER CER		MOVE *BLANK MOVE *BLANK S-ADD*SERD		40	
613.00 614.00 615.00 616.00 617.00 619.00 619.00 620.00 621.00	CER CER CER CER CER		MOVE *BLANK MOVE *BLANK	VC0009	40	
	CER CER CER CER	2000-01	MOVE *BLANK MOVE *BLANK S-ADD*SERD	VC0009	60	

Figure 23–12 Maintenance Program without a Subfile (part 8)

.00	C					
.00	C*	DISTRICTION OF A DATA	mare Mare	Sale fra 12	and and	r and edits the key
00		songerorane soos	aute wey	- sen me me	scante	a and edits the key
00	C*					
00	C*	Processing: 1.	Clear error is	dicetors and a	ACC NY	10
.00	C*	2.	Load input key	MR .	0.505	
.00	C*	3.	Validate mast	er file key.	3332	
.00	C*	4.	Release maste	r file record 1	lock.	
		5.	Load video so	reen output on	ingu	try.
1996	C*	4003				
.00	CER		BROOK.			
.00 .00 .00 .00 .00 .00 .00 .00 .00 .00	0.4					
0.0		Load data field	distingant mana-	ators long ou	1	let
.00	C*		and a second second			
00	CGR	\$999	CASEQ' /	6999		
00	C*.					
00	CGR		END			
10	C.	120000000000000000000000000000000000000				
8	C*	Reset error indi	cators and arra	Ym.		
	C.			1000	22.7	
200	CER		MOVE "BLANK	SARAT	29	
00	Cell		NOVERSBEET	\$32571 * DV,41		
00	CER		MOVERSNEET	dMX, 2		
00	CGR		CLEASORS			
10	C*					
00	C*	2 Q	2010000			
00	C*	Load video input	field for - It	en ID		
00	C*		82053660-0			
10	CGR		MOVEAVENIT EXER CODI2	400594		
10	CHA C*		EXEX COUL2			
÷.	CER		z-ADD#HUMR	Supace	-	
			Address Burnin man			
10	C*			100		
00	C*	Automatic Next N	unber for - Ite	e ID		
00	C*	Automatic Next N *1821 VDXIT				
00	CER	*1821	IF80 '1'			
00	CGR	VDOCET	ANDRO BLANK			
00	CSA CSA CSA CSA		GETON			91
00	CGR	*1991	DOMEQ'1' NOVE NAXIT	PETCK	-	
	Con.		CALL 'X0010'	PR TOW	÷	92
÷.	CGR		Contra Acceso			**
iii -	C* CSR		DARM DEXIT	104672	4	
0.0	CGR		DARM	PRIDX		
00	CER		DARM * INR.O	#NXTNO	80	
00	CGR		NOVE #NXTHO	QKKIT		
00	CER		NOVE #NXTHO	VEXIT		
00	CGR CGR	QXXIT	SETLLP92001			9291
	CHIN		RND			
10			2ND			
2	CER.	QXXY01	CRAINIP2901			9999
10	C*					
10	C*	Cost Center secu	rity edit.			
10	C*		SC SC Street			
50 50 50 50 50	CGR		MOVEL ' P92901			
00	CER CER CER		MOVELOXNEE	#MCO		
00	CER	#AUT	IFNE '1'			
00	CER	#TAUT	AXDNE'1'			
00	CER		EXER CODOO	- Checks cos	t ce n	er security
00	Cga.		END			
00	CHR	#AUT	IFNE '1'			
00	CER	#FAUT	ANDNE '1'			
00	CER	#MAUT	ANDNE'1'			
00	CSR		MOVE '1'	SSERCE	1	
	CON		END			
0.0	C*					
00 00 00	C*	If security viol	ation, set error	condition.		
00	C*	2011년 전 전 전 전 전 전 전 전 전 전 전 전 전 전 전 전 전 전				
- 00	CGR	SSEDCR	IFEQ '1' MOVE '1'	dMX, 9		
00	CER					

Figure 23–13 Maintenance Program without a Subfile (part 9)

CGR		NOVE ' '	SSERCA	1
CER		GOTO ENDIDO	4 4 H H L H	85
C*				
CRR		2ND		
C*				
C*	Edit result of r	ead and action o	ode.	
C*				
CGR	*1899	19800 '1'		
CSR	*1921	COMP '0'		41 'error'
CSR		RLGR		
CGR	*2821	COMP '1'		41 'error'
CGR		2ND		
C*				
C*	If indic	stor 41 on, inval	lid key for act	ion code.
C*				
CGR	*1841	1FEQ '1'		
CGR		NOVE '1'	@MX,2	
CGR		FETON		92
CGR		END		
C*				
C*	If indic	ator 99 cm, recor	of in use.	
C*				
CGR		1585 .1.		
CEL		CALL ' PPRELCK		91
C*				
CGR		PARM	##99D6	
CGR		NOAS ,7 .	axx, c	
CGR		SETON		9741
CSR		END		
C*				
C*				
C*	If not inquiry,	skip remainder	of subroutine.	
C*		S		
CSR	*1924	CARED, 0 .	END/003	
C*				
C*		lock on master 1	£∐∉.	Europe this or SETLL
C* C* CRR CRR	Salaass record	Icck on master 1 IFEQ '0' ANDEQ'0'	ш. лоғ	E uses this or SETLL eleuse record locks
C* C* CSR CSR CSR	Release record	Icck on master 1 IFEQ '0' ANDEQ'0' EXCPTUNIOCK	ш. лоғ	E uses this or SETLL
	Release record	Icck on master 1 IFEQ '0' ANDEQ'0'	ш. лоғ	E uses this or SETLL
	Seleawe record *1899 *1899	lock on master 1 IFEQ '0' ANDEQ'0' EXCPTUBLOCK EXD	ли ли to r	E uses this or SETLL elease record locks
	Seleawe record *1899 *1899	Icck on master 1 IFEQ '0' ANDEQ'0' EXCPTUNIOCK	ли ли to r	E uses this or SETLL elease record locks
	Nelease record *1899 *1899 If error	lock on master f IFEQ '0' ANDEQ'0' EXCPTUSLOCK END s, skip remainder	IIe. JDI to r r of subroutine	E uses this or SETLL elease record locks
C* C C C C C C C C C C C C C C C C C C	Nelease record *1899 *1899 If error	lock on master 1 IFEQ '0' ANDEQ'0' EXCPTUBLOCK EXD	ли ли to r	E uses this or SETLL elease record locks
	Ralaasa record *1890 *1899 If error *1893	lock on master f IFEQ '0' ANDEQ'0' EXCPTUSLOCK END s, skip remainder	IIe. JDI to r r of subroutine	E uses this or SETLL eleuse record locks
C* C* CSR CSR CSR CSR CSR C* C* C* C* C*	Ralaasa record *1890 *1899 If error *1893	lock on master f IFEQ '0' ANDEQ'0' EXCPTUSLOCK END s, skip remainder	IIe. JDI to r r of subroutine	E uses this or SETLL elease record locks
C* C* CSR CSR CSR C* C* C* C* C* C* C*	Salaase record *1890 *1890 If error *1893	lock on master 1 IPED '0' ANDED'0' EXCEPTIMENCE a, skip remainder CAREQ'1'	r of subroutine	E uses this or SETLL eleuse record locks
	Salaase record *1890 *1890 If error *1893	lock on master f IFEQ '0' ANDEQ'0' EXCPTUSLOCK END s, skip remainder	r of subroutine	E uses this or SETLL eleuse record locks
	Salaase record *1890 *1890 If error *1893	iock on master 1 IPED '0' ANDEQ'0' EXCEPTISLOCK EXCEPTISLOCK CAREQ'1' base informatio	r of subroutine BND003	E uses this or SETL elease record locks
	Salaase record *1890 *1890 If error *1893	lock on master 1 IPBD '0' EXCPTISIOCK END *, skip ressinder CAEBC'1' 	r of subroutine BND003	E uses this or SETLL eleuse record locks
	Nalaze redord *1899 *1899 If error *1893 Move date	iock on master 1 IPED '0' ANDEQ'0' EXCEPTISLOCK EXCEPTISLOCK CAREQ'1' base informatio	r of subroutine BND003	E uses this or SETLL elease record locks
	Nalaasa record *1899 *1899 If error *1893 Move dat:	IOCK ON MARKET I IPED '0' ANDED'0' EXCEPTINLOCK END *, skip remainder CAREQ'1' ment information EXEM SOO4	r of subroutine BND003	E uses this or SETL elease record locks
	Nalease redord *1899 *1899 If error *1893 Move dat	Inck on master I IPED '0' ANDEQ'0' EXCEPTIONCE e, ekip resainde: CAREQ'1' base informatic EXCH 5004 	r of subroutine BND002 an to video scr Moves infor	E uses this or SETLL elease record locks
	Nalease redord *1899 *1899 If error *1893 Move dat	Inck on master I IPED '0' ANDEQ'0' EXCEPTIONCE e, ekip resainde: CAREQ'1' base informatic EXCH 5004 	r of subroutine BND002 an to video scr Moves infor	E uses this or SETLL elease record locks
	Nalease redord *1899 If error *1893 Move dat: ENDO03	IOCK ON MARTER I IPEQ '0' ANDEQ'0' SAUDEQ'0' SAUDEQ'0' s, skip reasinder CAREQ'1' 	r of subroutine BHDDD2 	E uses this or SETL elease record locks
	Nalease redord *1899 *1899 If error *1893 Move dat	IOCK ON MARTER I IPEQ '0' ANDEQ'0' SAUDEQ'0' SAUDEQ'0' s, skip reasinder CAREQ'1' 	r of subroutine BHDDD2 	E uses this or SETL elease record locks
	Nalease redord *1899 If error *1893 Move dat EXECCO Copy Common Sub	IOCK ON MARTER I IPEQ '0' ANDEQ'0' SAUDEQ'0' SAUDEQ'0' s, skip reasinder CAREQ'1' 	r of subroutine BHDDD2 	E uses this or SETL elease record locks
	Nalaase record *1899 *1899 If error *1893 Move data ExtCock Copy Common Sub	IDOR ON MARKET I IPED '0' ANDED'0' EXCEPTINEDOR E. skip remainder CAREQ'1' 	r of subroutine BHDOD In to video scr Moves infor	E uses this or SETLL eleuse record locks
· · · · · · · · · · · · · · · · · · ·	Nalaase record *1899 *1899 If error *1893 Move data ExtCock Copy Common Sub	IDOR ON MARKET I IPED '0' ANDED'0' EXCEPTINEDOR E. skip remainder CAREQ'1' 	r of subroutine BHDOD In to video scr Moves infor	E uses this or SETL elease record locks
0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Salease redord *1899 *1899 If error *1893 Move dat ENDOO2 Copy Common Sub FY JDECPY, COO12	IOCK ON MARKET I IPED '0' XXUDQ'0' SXCPTURLOCK SXCPTURLOCK CAREQ'1' base informatic SXDAX SXDAX SXDAX	r of subroutine BHDOO2 m to video scr Moves infor	E uses this or SETLL eleuse record locks
00000000000000000000000000000000000000	Nalease redord *1899 If error *1893 Move data Move data ENDO03 Copy Common dub py JDECPY, Cool2 GUEKOUTINE 2004	LOCK ON MARTET I IDEN 000 ANDRO'0' EXCPTINELOCK END a, skip resainder CARRO'1' 	n to video sor Moves inform	E uses this or SETLL eleuse record locks
5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Nalease redord *1899 If error *1893 Move data Move data ENDO03 Copy Common dub py JDECPY, Cool2 GUEKOUTINE 2004	IOCK ON MARKET I IPED '0' XXUDQ'0' SXCPTURLOCK SXCPTURLOCK CAREQ'1' base informatic SXDAX SXDAX SXDAX	n to video sor Moves inform	E uses this or SETLL eleuse record locks
50000000000000000000000000000000000000	Nelesse redord *1899 If error *1893 Move data Move data ENDO03 Copy Common dub py JDECPY, CO012 	LOCK ON MARTET I IDEN 000 ANDRO'0' EXCPTINELOCK END a, skip ressinder CAREQ'1' 	The subcoutine anto video ser Moves inform Justify Numeric reen Data	E uses this or SETIL eleuse record locks
5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Nelesse redord *1899 If error *1893 Move data Move data ENDO03 Copy Common dub py JDECPY, CO012 	IOCK ON MARKET F IPEQ '0' ANDEQ'0' EXCPTINALOCK EXCPTINALOCK EXCPTINALOCK EXCEL CARDQ'1' BASE information EXCEL	r of subroutine BND002 on to video scr Moves infor Justify Sumeric reen Data information to	E uses this or SETIL elease record locks
50000000000000000000000000000000000000	Nelesse redord *1899 If error *1893 Move data Move data ENDO03 Copy Common dub py JDECPY, CO012 	LOCK ON MARTET I ANDRO 10' ANDRO 10' EXCEPTIONIOCX EXC CAREQ'1' 	To f subroutine BHD002 In to video sor Moves inform Justify Sumeric Information to en fields are	E uses this or SETIL eleuse record locks
100088888000008000080008000080000000000	Nelesse redord *1899 If error *1893 Move data Move data ENDO03 Copy Common dub py JDECPY, CO012 	Inck on master I IPED '0' ANDED'0' EXCPTIMINOCK EXC a base information EXCR S004 EXCR S004 EXCR S004 CALLY AND STR EXCR S004 CALLY AND STR CALLY AND STR CALLY AND STR All video Str CALLY AND STR CAL	IIe. DI to r r of subroutine 	E uses this or SETIL elease record locks mation to the video/report : Fields video stream. spie and neat be
2 2 2 3 3 8 8 8 8 2 2 2 2 8 2 2 2 2 2 2	Nelesse redord *1899 If error *1893 Move data Move data ENDO03 Copy Common dub py JDECPY, CO012 	LOCK ON MARTET I ANDEQ'0' axCPTURLOCK END s, skip ressinder CAREQ'1' 	r of subroutine BHDOD In to video sor Moves inform Justify Sumeric Information to an fields are a ric information to un subroutine	E uses this or SETIL elease record locks
1000 88888800000 80000 80000 80000000000	Nelesse redord *1899 If error *1893 Move data Move data ENDO03 Copy Common dub py JDECPY, CO012 	IOCK ON MARKET I IPED '0' ANDED'0' EXCEPTIONLOCK EXC a base information EXCENTION	IIe. IIIII. IIII	E uses this or SETIL elease record locks
2028888882222892828282828282828282828282	Nelesse redord *1899 If error *1893 Move data Move data ENDO03 Copy Common dub py JDECPY, CO012 	LOCK ON MARTET I ANDEQ'0' axCPTURLOCK END s, skip ressinder CAREQ'1' 	IIe. IIIII. IIII	E uses this or SETIL elease record locks
00000000000000000000000000000000000000	Nelesse redord *1899 If error *1893 Move data Move data ENDO03 Copy Common dub py JDECPY, CO012 	IOCK ON MARKET E IPED '0' ANDEQ'0' EXPTINIOCX EXPTINIOCX EXPTINIOCX EXPTINIOCX EXPTINIOCX EXPL *, skip remainder CAEBQ'1' 	II	Eusen this or SETIL elease record locks mation to the video/report : Fields video screen. phen and namet be COOl4 to set eliting for
00000000000000000000000000000000000000	Nelesse redord *1899 If error *1893 Move data Move data ENDO03 Copy Common dub py JDECPY, CO012 	Inck on master I IPEQ '0' XNUEQ'0' SXCPTURLOCK SXCPTURLOCK CAEQ'1' base informatio EXEM 5004 SYDER routine - Right - Load Video Sc tharefore nume processed thro proper decimal Deple you sere Date fields nu	Teen Data n for failed are a n to video scr Moves information Justify Sumario reen Data information to an fielde are a ric information to an failed are a st be converted	E uses this or SETIL elease recordlocks
5000888888000008500085000850000850000000	Nelesse redord *1899 If error *1893 Move data Move data ENDO03 Copy Common dub py JDECPY, CO012 	Lock on master 5 IPEQ '0' ANDEQ'0' EXEMPTISHOCK EXEMPT	IIE. IIE. IDE T of subroutine BHD003 on to video sur m to video sur on to video sur 	Eusen this or SETIL elease record locks
00000000000000000000000000000000000000	Nelesse redord *1899 If error *1893 Move data Move data ENDO03 Copy Common dub py JDECPY, CO012 	Lock on master 5 IPEQ '0' ANDEQ'0' EXEMPTISHOCK EXEMPT	Teen Data n for failed are a n to video scr Moves information Justify Sumario reen Data information to an fielde are a ric information to an failed are a st be converted	Eusen this or SETIL elease record locks

Figure 23–14 Maintenance Program without a Subfile (part 10)

00.971	C*.					
19.00	CER	6004	BEGGS.			
00.09	C*					
91.00	C*					
92.00	C*					
92.00	C*	Move to output	- Description for	Cost Center		
94.00	C*	0.50				
95.00	CGR		CALL 'X0006'		81	
96.00	C*					
87.00	CER		BARAJE* MEAR	PROMOD 1		
88.00	CER		DARN '1'	PRIMOD 1		- Server for Bils. Only
99.00	Call		RARM GXXCC	PENCU 12		
90.00	CER		SASM *BLANKE	PERSON 4		
91.00	CGR.		RARM.	10004		
92.00	C*			WC0401		
93.00	CER	202338	NOVE *BLANK IFRQ *BLANK	AC0441		
15.00	CER	F0 80.04	MOVELNCOLOI	V00001		- Description loaded
96.00	CER		RND	V00002		
95.00 97.00						the *VC0 field
99.00	C*					
99.00	e'	Description dis	play for - Item Ty			
00.00	Č*	successform and	tered over a result th	E.9		
01.00	CER		CLEAR 100050			
02.00	CER		MOVELGENTY	WUDY .		
02.00	CER		MOVE SAXTY	WUR7		
04.00	Cen		MOVE GEETS	WUKY	100	File server for user
05.00	CER		CALL 'X0005'	0.02220.0	91	
05.00	C*				-	defined codes
07.00	CGR.		TAXM	100050		
00.00	CER		NOVE *BLANK	VCD002		
00.00	CER	#122.5.5	IFRQ '0'			
10.00	CGR		MOVEL#UDG01	VC0002		
11.00	CER		RND			
12.00	C*					
12.00	C*	2.2	32 I G	22		
14.00	C*	Description dis	play for - Ites Un	it of Measure		
15.00	C*					
16.00	CGR		CLEAR 10005U	and the second se		
17.00	CER		NOVELGENUM	#063		
19.00	CGR		NOVE RACUM	WURT		
19.00	CER		NOVE GEEUM	#DXA	22	
20.00	CGR.		CMLL 'X0005'		91	
21.00	CER		RARM	100950		
22.00	CER			VC00430		
12.00 N.00	CER	#UDER.	NOVE SLANK	AC00.63		
25.00	CER	a carda	MOVEL#UDL01	VC0402		
6.00	CER		END	1-1994		
27.00			RND.			
29.00	C*					
29.00		Description dis-	lay for - Item Cat	ecory Code Con		
20.00	è.	arab	and not - sound out	-51 seem over		
71.00	CER		CLEAR 10005U			
22.00	CGR		MOVELGENCOOL	WU22		
22.00	CGR		MOVE RAXOO1	WURT		
24.00	CGR		MOVE gameol	WUXY		
15.00	CGR		CALL 'X0005'		91	
16.00	c*					
7.00	CER		DARM	100450		
19.00	CER		MOVE "PLANK	VC0004		
9.00	CER	WUDSS.	IFEQ '0'	2.040 (000 (000))		
60.00	CER	0.00000000	MOVEL#UDLO1	VC0004		
11.00	CER		END	0.000.9103		
2.00						
2.00	1000					
44.00	100	Description displ	ay for - Iten Cate	gory Code 002		
	è.	1911/1911/1913/00/1913	2023년 김 영향은 것이다.			
45,000	CGR		CLEAR 20005U			
	CER		MOVEL DEX002	WUG2		
45.00	CGR		MOVE Rax002	WURT		
46.00 47.00	· - 85 23.		MOVE QXX002	WUKY		
45.00 47.00 49.00	CER					
45.00 45.00 47.00 49.00 49.00 50.00			CALL 'X0005'		91	
46.00 47.00 49.00 49.00 50.00 51.00	CER CER C*				*1	
16.00 17.00 19.00 19.00 50.00 51.00	CER CER			100050	41	
45.00 47.00 49.00 49.00	CER CER C*			100050 VCD005	*1	

Figure 23–15 Maintenance Program without a Subfile (part 11)

55.00	CRR CRR		MOVEL#UDL01 END	VC0005	
57.00	C*				
50.00	C*				
59.00	C*	Description dis	play for - Item Cat	agory Code (03
60.00	C*	고기에 아름다 있는 것을 같은 것을 것을 수 있다.		1947 C 1968 C 1968	
61.00	CRR		CLEARIDODSU		
62.00	CRN		MOAEF68X003	MORA	
63.00	CER		MOAE WEX003	新口田工	
64.00	CGR		MOAE GXX003	#UXA	
65.00	CBR		CALL '200-0-05'		91
66.00	C*				
67.00	CRR		PARM	200050	
69.00	CRR		HOVE BLANK	VC0006	
69.00	CSR	#723.R	1982 '0'		
70.00	CSR		wowerwittol	VCDDD6	
71,00	CBR		END		
72.00	C*				
72.00	C*	Deservices and	alou for the a		-
74.00		Description dis	play for - Item Cat	egory code (104
75.00	CRR		CLEARIODOSU		
76.00	CER		CLEAR 1000 SU WOVELGEX004	8082	
78.00	Cat		MOVE 34X004	WUNT	
79.00	Cat		MOVE GXX004	WUNY	
79.00 90.00	CER		CALL '200005'	#unz	91
91.00	C*		CALLS AVVV2		81
92.00	CER		PARM	200050	
92.00	Cat		NOVE "BLANK	VC0007	
94.00	Cas	ettern n	IFEQ '0'	Theory of P	
95.00	CRR	a county	wover.#uprol	VC0007	
26.00	CER		2ND	trand,	
97.00	C*				
99.00					
89.00	C*	Description dis	play for - Item Cat	secory Code (005
90.00	C*		198	500	
91.00	CER		CLEASI000 SU		
92.00	CRR		WOVELGEX005	WUGY	
93.00	CGR		HOVE BAXODS	WURT	
94.00	CGR		MOVE QXX005	#128.2	
95.00	CGR		CALL '200005'	101010	91
96.00	C*				
97.00	CGR		FARM	100050	
99.99	CGR		NOVE "BLANK	VCOODE	
99.00	CER	STERS.	1990 '0'		
00.00	CRR		wovarwuprol	VC000e	
00.10	CGR		END		
12.00	C*				
12.00	C*				
14.100		Nove to output	- Opat Center		
15.00	C*				
16.00	CRR		NOVE *BLASE	兼成 加速度 化	
97.00	CSR		wovergence	## 15(PR	
10.00	CSR		WOVE Taxoc	#D4Ab	
09.00	CRR		HOVE NAXOC	SEMBO	Editing information
10,00	CGR		NOVE RECC	##C	retrieved in S998
11.00	CGR		NOVE PAXOC	HDG PD	1 cm wy cu m 3320
12.00	0.68		NOVE Gatoc	#DA2D	
12.00	CRN		WOVE Jaxoc	SALS.	
14.00	CER		WOME , ,	#2008	
15.00	CGR		NOVE ' '	#DCOR	Company data to a 22
16.00	CER		SXER C00161		Copy module to edit
17.00	c'				field for use on
10.00	CRR	#ALS.	IPEQ 'L'		screen/report
19.00	Cat		NOVELSEINER	ADROG.	
20.00	CER		RLOR		
21.00	CER		MOVE MAINER	VENCC	
22,00	Cax		2HD		
	C*				
	C*	Carlos de Statutos			
24.00		Move to output	- Description		
23.00 24.00 25.00					
14.00 15.00 25.00	C*		AND REAL PROPERTY AND INCOME.	TRANSPORT OF	
14.00 15.00 25.00 17.00	C* CBR		MOVELOXXDE	VEXDe	
14.00 15.00 25.00 27.00 19.00	C# C#X C*				
24.00	C* CBR	Move to Output			

Figure 23–16 Maintenance Program without a Subfile (part 12)

922.00	CGR		MOVE GXXDT	SCIDAT 6	
923.00	CGR		NOVE *BLASE	WEDAT 9	
924.00	CGR		MOVEL ' JUL	WFFMT 7	
935.00	CGR		MOVEL'*SYEVAL	'STRMT 7	
936.00	CGR		MOVEL ' GYEVAL	WSEP 7	
937.00	CUN		NOVE ' '	SUBTST 1	E
939.00	CER		CALL 'X0029	91	External program
929.00	C*.				used to edit dates
\$40.00	CER		DASM	#FIDAT	
941.00	CGR		DASM	# 2DAT	
942.00	CGR		PARM	#FFMT	
	CER		283M		
942.00	CER		2ARM	#TFMT #CEP	
945.00	CER		FARM	SERIET	
946.00	CER		MOVEL SEDAT		
947.00					
949.00	C*		1		
949.00	C*	Move to output	- Item ID		
950.00	e*				
951.00	CGR		MOVE *BLASK	#GINDS.	
952.00	CGS		MOVELOXXIT	#61595	
952,00	CER		MOVE TEXIT	HDTYP	
954.00	CGR		MOVE MaxIT	# 2NRD	
955.00	CGR		MOVE BAXIT	#2C	
956.00	CGR.		MOVE PAXIT	NDEPD	
957.00	Cell		MOVE GEXIT	NDATO	
959.00	CER		MOVE JAXIT	WALS.	
959.00	CER		MOVE 1	#2C08	
P50.00	CER		NOVE	WDCOR.	
				mo-con.	
961.00 962.00	CER.		EXER COOL61		
			IFEQ 'L'		
962.00	CER	#ALS		1.00000	
964.00	CGR		MOVEL NG DIER.	VERIT	
965.00	CES		ELGE		
00.339	CGR		RERIES SYON	VERTT	
967.00	CGR		28D		
99.99					
00.089	-C*				
970.00	C*	Move to output	- Quantity - On Han		
971.00	C*				
972.00	CER		NOVE *BLANK	#CINGS.	
973.00	CGR		MOVELOXXQT	WEINER	
974.00	CER		MOVE TEXOT	#D77P	
975.00	CGR		NOVE Maxor	HENRO	
976.00	CGR		MOVE DECOT	#BC	
977.00	CGR		NOVE PAXOT	NDEPD	
979.00	CGR		NOVE GAXOT	#DATD	
979.00	CER		NOVE JEXOT	HALS	
00.00	CGR		NOVE	#2008	
	CER		MOVE / /		
991.00 992.00	008		EXER Coolel	HDCOR.	
993.00	C*				
994.00	CER	#ALS	IFEQ 'L'	100000	
995.00			MOVEL HE INDA	ADKGA	
00-39	CGR		REGR		
997.00	CER		NOVE #SINDS	VERGT	
00.999	CGR		END		
00.999					
00.009	C*				
992.00	C*	Move to output	- Item type		
992.00	C*	-			
992.00	CGR		MOVELQUXTY	VERTY	
994.00	C*				
995.00	C*				
00,349	C*	Nove to cutput	- Item Unit of Near	128	
997.00	C*	1893 N. C. M. C			
00.999	CGR		MOVELOXXUM	VEICOM	
00.00					
0.00	C*	Month his mathematic	- Item Category Cod	. 607	
	C*	Hove to oncone	- ream rateBosh cos		
1001.00			NOVE *ELANK	HO DODA	
1001.00	1000				
1001.00 1002.00 1002.00	C*				
1001.00 1002.00 1002.00 1002.00	C*		MOVELOXXDO1		
1001.00 1002.00 1002.00 1004.00 1005.00	C*		MOVE TEXOD1	NDTYP	
1001.00 1002.00 1002.00 1004.00 1005.00 1005.00	C* C*		MOVE TEXOD1 MOVE MEXOD1	HDTYP HENRD	
1000.00 1001.00 1002.00 1002.00 1002.00 1005.00 1005.00 1005.00 1005.00	0000		MOVE TEXOD1	NDTYP	

Figure 23–17 Maintenance Program without a Subfile (part 13)

0.00	CGR		HOVE Jaxool	BALA
1.00	CGR		HOVE ' '	#2008.
	CEX		HOVE ' '	SDCOR.
3.00	CGR,		20028 C00161	
4.00	C*			
5.00	CON	#AL3.	INES 'L'	1 (C. 1) (C. 1)
6.00	CGR		NOVELWEINER	VERDOL
7.00	CBR		BLOR	
8,00	CGR		NOVE #GINER	VDXDOl
9.00	CGR		RND	
0.00				
2.00	S.			1
	e.	Nove to output .	- Item Category Co	5e 002
3.00	Cas		NOVE *BLANK	SCINDA.
4.00	Cax			WE DOWN.
6.00	COR		WOVE TEXO02	#DTYP
7.00	CRR		NOVE Max002	SZNAD
8.00	COR		HOVE DEX002	HEC .
9.00	CRR		HOVE PAX002	#DEPD
9.00	CER		NOVE Pax002	#DGPD #DATD
1.00	CRR		NOVE JAX002	WALS.
	Cat		NOVE JEXOD2	#2008
2.00	CGR		NOVE	#2008. #DC08.
				#2-COR
4.00	CGR		E0088 C00161	
5.00	CF CER		IFEQ 'L'	
		SAIR		
7.00	CGR		NOVELAGINER	VENO02
9.00	CEX		STOR	VENDO2
9.00			NOVE #SINER	VERO02
0.00	COR		END	
1.00	C*			
2.00	·C*			
3.00	C* C*	Move to output -	- Item Category Co	de 003
4.00	·			
5.00	CBL		NOVE *BLASK	## 2010 B.
6.00	CGR		HOVE TEX002	# 2 IND R
7.00				#DTYP
8.00	CGR		HOVE Max002	# RMRD
9.00 0.00	CER		NOAS BSX003	#ZC
1.00	Cast.		HOVE Fax003	NDEFD NDATD
2.00	CRR		NOVE JAX003	BALA
3.00	CRR		HOVE SELVUS	#2008
			HOVE '	
4.00	CER		20028 C00161	HDCO8
\$.00				
5.00	CRR	#ALA	IFEQ 'L'	
8.00	008	in reason	NOVELAGINER	MDXD02
9.00	Can		SLOP	100003
0.00	CGS		NOVE SEINER	VENDO2
1.00	Cas		SND	The second se
	C*			
2.00	C+			
	C*	Monte has preferred	- Item Category Co	4. 0.04
5.00	ě.	House no onchos -	cacegory co	
6.00	CER		HOVE *SLASS	#C IMPR
7.00	CGR		MOVELOXX004	#C IMPR
8.00	CBR		NOVE TEXOD4	HDTYP
9.00	COR		NOVE Maxoo4	WEWND
0.00	COR		NOVE DEX004	#2C
1.00	Cas		NOVE FRIOO4	#DGPD
2.00	CGS		HOVE GEX004	NDATD
2.00	CGR		HOVE JEX004	BALS
	Cas		NOVE JELOUS	HECON.
	Cas		HOVE	egooa.
5.00	CER		EXCRR C00161	HOLON.
6.00 7.00	CEX, C*		EXER CODISI	
8.00	COR	#ALR	IPRO 'L'	
9.00	CGR		MOVEL#GINER	VEXD04
0.00	CGR		FLOR	
1.00	CGR		NOVE MAINER	VDXD04
2.00	CGR		RND	
3.00				
4.00	C*		24 22 2	
5.00	C*	Move to output .	- Item Category Co	5e 005
	C*			

Figure 23–18 Maintenance Program without a Subfile (part 14)

			 MARK PERMIT 	1.00.000	
.00	CGR.		NOVE "BLANK	NO DECK	
	CGN.		MOVELOXX005	## 1MBR	
.00	CQR.		NOVE TAXODS	#DTYP	
.00	CGR		MOVE Maxoos MOVE BEROOS	HIND	
.00	CSR		MOVE PAXODS	HEC HDEPD	
.00	CSR.		MOVE Gaxoos	REATE	
.00	CGR.		MOVE JEXODS	MALA	
.00	CGR.		MOVE 1 1	WECOR.	
.00	CGR		NOVE ' '	#DCOR	
.00	CSR.		EXER COD161		
.00	C* CER				
.00		#ALR	INDO 'L'		
.00	CGR		NOVEL #4 INDR	V00005	
.00	CEN.		ELGE		
.00	CGR.		NOVE #BINES END	VENDOS	
	100		870		
.00	068	2320.004	DMD-GR		
.00	C*.				
.00	C* C*	Copy Connon Sub	routine - Format 8	unaric Fields	for Output with Override
.00	C*				-
.00	C/009	PY JDECOPY, C00141			
.00	· · · · ·				
.00	C*	SUBBOUTINE 2005	- Smarth Territ	Validates and	edits data
.00	C*	SUBBLUTINE 2005	- and then strepting	entered by the	e user
.00	C+				
.00	C*	Processing: 1.	Validate all vid	eo input.	
.00	C*		All numeric fie	lds must be pr	commend
.00	C*		thru subroutine	# C0012 and C0	015 in order
.00	C*		to scrub the al	pha input fiel	d and convert
.00	C*.		15 digits and 0	decimals.	
.00	C*				
.00	C*		Date fields was		
.00	C*		format to their	incernal fore	at of Month,
				distant medane.	
			day and year or	julian using	program X0029.
.00	C*	2	day and year or . Update data rec	julian using ord fields fro	program X0029.
.00	C* C*	2 2005	day and year or . Update data rec REDICK	julian using ord fields fro	program X0029.
.00. .00. .00.	C* CSR. C*		. Update data rec	julian uaing ord fialds fro	program X0029.
00. 00. 00. 00.	C* C* C* C*	2005	. Update date rec RECER	ord fields fro	program X0029.
00. 00. 00. 00.	0 0 0 0 0 0	2005	. Update data rec BEGER	ord fields fro	program X0029.
00. 00. 00. 00.	0 0 0 0 0 0	goos	 Opdate data rec BDGDR or change, bypass 	ord fields fro	program X0020. m videc.
00. 00. 00. 00.	0 0 0 0 0 0	2005 If not addition *1821	 Update data rec aucus or change, bypass IFNQ '0' 	ord fields fro	program 20029. m video. Only performs this
00. 00. 00. 00.	0 0 0 0 0 0	goos	 Update data rec BUDDS or change, bypass IFDQ '0' ANDDQ'0' 	ord fields fro	program 20029. m video. Only performs this subroutine if action code i
00. 00. 00. 00.	0 0 0 0 0 0	2005 If not addition *1821	 Update data rec aucus or change, bypass IFNQ '0' 	ord fields fro	program 20029. m video. Only performs this
00. 00. 00. 00. 00. 00. 00. 00. 00. 00.		2005 If not addition *1821	 Update data rec aucos or change, bypass IPBQ '0' ANDEQ'0' GDTO EMDODS 	ord fields fro	program 20029. m video. Only performs this subroutine if action code i
00, 00, 00, 00, 00, 00, 00, 00, 00, 00,	0000000000000000	2005 If not addition *1821	 Update data rec BDGER or change, bypass IFBQ '0' ANDEQ'0' ANDEQ'0' GOTO ENDOS 	ord fields fro	program 20029. m video. Only performs this subroutine if action code i
.00 .00 00 00 00 00 00 00 00 00 00 00 00	00000000000000000	2005 If not addition *1821	 Update data rec BDGER or change, bypass IFBQ '0' ANDEQ'0' ANDEQ'0' GOTO ENDOS 	ord fields fro	program 20029. m video. Only performs this subroutine if action code i
00 00 00 00 00 00 00 00 00 00 00 00 00	000000000000000000000000000000000000000	If not addition *IN21 *IN22	Update data rec BRDER or change, bypass IFRQ '0' ANDEQ'0' ADDO INDIOS END	ord fields fro	program 20029. m video. Only performs this subroutine if action code i
.00 .00 .00 .00 .00 .00 .00 .00 .00 .00	000000000000000000000000000000000000000	2005 If not addition *1821	Update data rec BRDER or change, bypass IFRQ '0' ANDEQ'0' ADDO INDIOS END	ord fields fro	program 20029. m video. Only performs this subroutine if action code i
00 00 00 00 00 00 00 00 00 00 00 00 00	2292222888882822222	If not addition *IN21 *IN22	Update data rec BDDR 	ord fields fro	program X0020. m video. Only performs this subroutine if action code i add or change
	000000000000000000000000000000000000000	If not addition *IN21 *IN22	Delta data rec BRDER Dr change, bypass IFNQ '0' GOTO EMDOOS BND - Cost Center CALL 'X0005'	ord fields fro	program 20029. m video. Only performs this subroutine if action code i
.00 .00 .00 .00 .00 .00 .00 .00 .00 .00	558555588885555558	If not addition *IN21 *IN22	Update data rec BDDER or change, bypass JFDQ '0' AUDEQ'0' GOTO EMDOOS END - Cost Center CALL 'X0006'	eubroutine.	Program X0020. m video. Only performs this subroutine if action code is add or change 29
	000000000000000000000000000000000000000	If not addition *IN21 *IN22	Delta data rec BRDER Dr change, bypass IFNQ '0' GDTO EMDODS BMD - Cost Center CALL 'X0005'	subroutine.	Program X0020. — Only performs this subroutine if action code i add or change 29
		If not addition *IN21 *IN22	Dydate data rec BRDER 	subroutine.	Program X0020. — Only performs this subroutine if action code is add or change 20 1 1
.00 .00 .00 .00 .00 .00 .00 .00 .00 .00		If not addition *IN21 *IN22	 Opdate data rec BBGER or change, bypass IFNQ '0' GOTO ENDOOS END Cost Center GALL 'X0006' DATA '1' DATA '1' 	subroutine.	Program 20029. m video. —Only performs this subroutine if action code i add or change PP 1 1
		If not addition *IN21 *IN22	 Update data rec BRDER 	subroutine.	Program 20029. m video. —Only performs this subroutine if action code i add or change PP 1 1
		2005 If not addition *1821 *1822 Forub and edit	Deter data rec BRGER or change, bypass IPRO '0' GOTO EMDODS BND - Cost Center CALL 'X0006' DATM '1' PARM '1 PARM '1 PARM VEXCO PARM SELANKE PARM	subroutine. Seconol Selecto Selecto Selecto Selecto Selecto Selecto	Program 20029. m video. —Only performs this subroutine if action code i add or change PP 1 1
		2005 If not addition *1821 *1822 Forub and edit	 Update data rec BRDER 	subroutine. Seconol Selecto Selecto Selecto Selecto Selecto Selecto	Program X0020. m video. —Only performs this subroutine if action code i add or change PP 1 1 1 4
	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	2005 If not addition *1821 *1822 Forub and edit	Update data rec BRDER SADBQ'0' GUTO EMDODS BMD CALL 'X0006' SADM '- SADM '- SADM '- SADM '- SADM '- SADM ' SADM '	PROMOD PROMOD PRIMOD PRIMOD PRIMOD PRIMOD PRIMOD PRIMOD PRIMOD PRIMOD	Program 20029. m video. —Only performs this subroutine if action code i add or change PP 1 1
		2005 If not addition *1821 *1822 Forub and edit	Update data rec BDDER IFRQ '0' ADDEQ'0' GDTO EMEDOS END - Cost Center CHLL 'X0006' PANN '1' PANN '1'	subroutine. subroutine. Second SetHOD SEARCH SUBROUT SUBRAM 10004 EMK, 10	Program X0020. m video. —Only performs this subroutine if action code i add or change PP 1 1 1 4
		2005 If not addition *1821 *1822 Forub and edit	Update data rec BDGER 	PROMOD PROMOD PRIMOD PRIMOD PRIMOD PRIMOD PRIMOD PRIMOD PRIMOD PRIMOD	Program X0020. m video. —Only performs this subroutine if action code i add or change PP 1 1 1 4
	00080008888080000000888888808888888888	2005 If not addition *1821 *1822 Forub and edit	Update data rec BDDER IFRQ '0' ADDEQ'0' GDTO EMEDOS EMD - Cost Center DATM '1' DATM '1' DA	PROMOD PROMOD PRIMOD PRIMOD PRIMOD PRIMOD PRIMON PR	Program X0020. m video. —Only performs this subroutine if action code i add or change PP 1 1 1 4
	00000000000000000000000000000000000000	2005 If not addition *IN21 *IN22 Forub and edit	 Update data rec BRDER 	subroutine. subroutine. SECOND SEIMOD SEIM	Program X0020. m video. —Only performs this subroutine if action code i add or change PP 1 1 1 4
	00000000000000000000000000000000000000	2005 If not addition *IN21 *IN22 Forub and edit	 Update data rec BRDER 	subroutine. subroutine. SECOND SEIMOD SEIM	Program X0028. — Only performs this subroutine if action code i add or change 99 1 1 4 4 4 4 4 4 4 4
		2005 If not addition *IN21 *IN22 Forub and edit	Update data rec BDGER IFRQ '0' ADDRD'0' GOTO EMBODS END COat Center GALL 'X0006' 	subroutine. subroutine. SECOND SEIMOD SEIM	Program X0028. — Only performs this subroutine if action code i add or change 99 1 1 4 4 4 4 4 4 4 4
		2005 If not addition *IN21 *IN22 Forub and edit -	 Update data rec BDGER 	subroutine. subroutine. SECOND SEIMOD SEIM	Program X0028. — Only performs this subroutine if action code i add or change 99 1 1 4 4 4 4 4 4 4 4
		2005 If not addition *IN21 *IN22 Ecrub and edit Pd23338 Scrub and edit	Update data rec BDGER IFRQ '0' ADDRD'0' GOTO EMBODS END COat Center GALL 'X0006' 	subroutine. subroutine. SECOND SEIMOD SEIM	Program X0028. — Only performs this subroutine if action code i add or change 99 1 1 4 4 4 4 4 4 4 4
		2005 If not addition *IN21 *IN22 Gorub and edit - Pd2338 Gorub and edit -	 Update data rec BDDER 	PROMOD PROMOD PRIMOD PRIMOD PRIMO PRIMO PRIMO PRIMO PRIMO PRIMO PRIMO PRIMO PRIMO PRIMO PRIMO PRIMO PRIMO PROMOD PRIMO PROMOD PR	Program X0028. — Only performs this subroutine if action code i add or change 99 1 1 4 4 4 4 4 4 4 4
		2005 If not addition *IN21 *IN22 Ecrub and edit Pd23338 Scrub and edit	 Update data rec BDDER 	PROMOD PROMOD PRIMOD PRIMOD PRIMO PRIMO PRIMO PRIMO PRIMO PRIMO PRIMO PRIMO PRIMO PRIMO PRIMO PRIMO PRIMO PROMOD PRIMO PROMOD PR	Program X0028. — Only performs this subroutine if action code i add or change 99 1 1 4 4 4 4 4 4 4 4

Figure 23–19 Maintenance Program without a Subfile (part 15)

1165.00	CGR	QXXDG	IFEQ *BLANK			
1166.00	CGR.	Dexos	IFNE "BLASK			
1167.00	CGR	2011/12/2	HOVEADEXDE	COV.		
1169.00	CGR		NOVENADV	QXXDE		
1169.00	CGR	90V,1	IFEQ			
1170.00	CGR		HOVE ' '	407,1		
1171.00	CGR		2-ADD2			
1172.00	CSX	#M	DOMLE40			
1173.00	CGR.	40V, #M	IPBQ			
1174.00	CGR		NOVE / /	GOV, MM		
1175.00	CGR		2010	1000		
1175.00	CSR.		ADD 1	#M		
1177.00	CSR.		DISID			
1178.00	CGR.		NOVEMBOV, 2	GXXDE		
1190.00	Cas		RND			
1191.00	Cat		RND			
1192.00	C*		abit.			
1192.00		Edit allowed val	The second section			
1184.00	C*.	Boit Risoved Val	use - percription			
1195.00	CGR	Aexos	IFEQ '*NE'			
1196.00	CER	OXXDG	ANDEQ*BLANK			
1197.00	CSR	Towns, a	HOVE '1'	4MX,02		
1199.00	CSR		SETON	1000 CT	4292	
1199.00	CSR		DISID			
1190.00						
1191.00	C*					Common subroutir
1192.00	C*	Scrub and edit	- Date Last Ship			to convert screen
1192.00	C*					
1194.00	CGR		NOVEAVOXOT	astel		A fields to numeric
1195.00	CER		BOCHR C0012	102.5		data
1196.00	C*					_Work fields used in the RPO
1197.00	CQR		Z-ADD#NUME	\$1936	60	
1299.00	CGR.		NOVE \$NER6	QXXDT		program begin with \$
1199.00	C*					
1200.00	C*	Edit julian date	- Date Last Ship			
1201.00	C*					
1202.00	CSR.	VOXDT	IFNE "BLANK		_	
1203.00	CGR.		NOVE CXXDT	SCIDAT -	6	
1204.00	CER				7	
1205.00	Cat		HOVEL '* SYSVAL HOVEL '* JUL	'SFFMT 'STFMT	7	
1205.00	Can		NOVEL * NONE	16000	4	
1207.00	CER		NOVEL ' SONE	SUSTET :		
1209.00	108		CALL / 200029	Sauras .		
1210.00	C*					
1211.00	CER		DARM	WEIDAT		
1212.00	COR		PARM	#RDAT		
1212.00	008		DARM	#FFNT		
1214.00	COR		PARM	#TFMT		
1215.00	CGR		DARM	#222		
1216.00	CGR		PASM	SURTET	Wash	fields used in a copy
1217.00	CGR		NOVELBEIDAT	QXXDT		
1219.00	CGR	SURTAT	1980 /1/		modul	e be gin with #
1219.00	CGR.	1000000	HOVE '1'	@MIC, 04		
1220.00	CGR		SETON	2008-85	45.92	
1221.00	CGR		200D		1933	
1222.00	CGR		END			
1223.00	C*					
1224.00	C*					
1225.00	C*	Scrub and edit	- Item ID			
1225.00	C*					
1227.00	CSR.		NOVEAVOXIT	(EDEM		
1228.00	CGR		20068. C0012	10,0000		Convert to numeric
1229.00	-C*					
1230.00	CGR		HOVE FAXIT	NDEPD		
1231.00	CGR		NOVE GEXIT	NDATO		Adjust for display
1232.00	CGR		\$3088 C00151			decimals
1227.00	C*			100000		Sec. S. and Compared
1234.00	CGR		NOVE #SUNAR	QXXIT		
	C.		second land			
1235.00	C*	Set default valu	e - Item ID			
1235.00						
1235.00 1236.00 1237.00	C*		and the second second second			
1225.00 1226.00 1227.00 1229.00	C# CSR	VOLIT	INNO .BIYAN			
1225.00 1226.00 1237.00 1239.00 1239.00	Cat Cat	VDXIT Dex17	ANDRE" BLANK			
1225.00 1226.00 1227.00 1229.00	C# CSR			allow.		

Figure 23–20 Maintenance Program without a Subfile (part 16)

1242.00	C*				
1242.00	CGR.		MOVE PAXIT	SDGPD :	
1244.00	CGR		MOVE GEXIT	HDCTD	
1245.00	098		EX48 C00151		
1246.00	C*				
1247.00	CGR			CKXIT	
1249.00	CER		END		
1249.00	C*		2013) as more series and		
1250.00	C*	Edit upper and	lower range - Item ID		
1251.00	C*	1240.03			
1252.00	CER	1.0017	IFNE *BLANK		
1252.00	CER		NOVE *BLAHR	XeXIT 15	
1254.00	CER		MOVE '1' MOVELOXXIT	SERIET	
1256.00	Can	20227	IFGE LAXIT	AGAIT	
1255.00	Cen	XexIT	ANDLEUAXIT		
1259.00	CER		MOVE	SERTET	
1259.00	CEN		END .		
1260.00	CBR	STRTET	IPRO '1'		
1261.00	CER			GME, 07	
1262.00	CER		SETON		4193
1262.00	CER		END		
1264.00	CGR		END		
265.00	C*		80%L		
266.00	C*				
1267.00		Scrub and adi	Quantity - on Mand		
1269.00	č*		a second second		
1269.00	CGR		MOVERVENOT	4000	
1270.00	CGR		EXAS COOL2		
1271.00	C*				
1272.00	CSR		NOVE Pacor	REGRO	
1272.00	CBR		MOVE GaxOT	TATE	
1274.00	CGR		EX68 C00151	10000	
1275.00	C*				
1276.00	CGR		NOVE #NUMBR	OKNOT	
1277.00	C*				
1279.00	C*	Set default val-	ue - Quantity - On Har	od -	 Default value from Data
1279.00	C*				Dictionary
1280.00	CER	VDSQT	IFEQ *BLASK		Dictionally
1291.00	CG8.	DexQT	ANDRE" BLANK		
1292.00	CGR		MOVERDENOT	400M	
1297.00	C98.		EXAS COOL2		
1284.00	C*				
1295.00	CGR		TOXE Faxor	NDGP0	
1296.00	CER		NOVE Gazor	SDATD	
1297.00	CGR		EX68 C00151		
1299.00	C*				
1299.00	CER			CKNOT	
1299.00	CER		END		
1291.00	C*				
		18-			<u>- 18</u>
	C*	Edit upper and	lower range - Quantity	y - On Hand	Upper and lower ranges from
1297.00	C.	10.2		y - On Hand	
1293.00	C* C* CSR	Edit upper and .	IFNE *BLANK	0.3333036363	Upper and lower ranges from Data Dictionary
1293.00 1294.00 1295.00	C* CSR CSR	10.2	IPNE *BLANK MOVE *BLANK	XeXQT 15	
1293.00 1294.00 1295.00 1295.00	C* CSR CSR CSR	10.2	1PME *BLARK MOVE *BLARK MOVE '1'	XENOT 15 SENTAT 1	
1293.00 1294.00 1295.00 1296.00 1297.00	C* CSR CSR CSR CSR	Lexor	1FRE *BLARK MOVE *BLARK MOVE *1/ MOVELOXNOT	XeXQT 15	
1293.00 1294.00 1295.00 1296.00 1297.00 1299.00	C* CSR CSR CSR CSR CSR CSR	Lexot	IFNE "BLANK MOVE "BLANK MOVE 'l' MOVELQENDT IFGE LANDT	XENOT 15 SENTAT 1	
1293.00 1294.00 1295.00 1296.00 1296.00 1299.00 1299.00	C* CSR CSR CSR CSR CSR CSR CSR CSR	Lexor	IFNE "BLANK MOVE "BLANK MOVE"1" MOVELQXNOT IFNE LANOT ANDLANGT	XeNQT 15 SERTET 1 XeNQT	
1293.00 1294.00 1295.00 1296.00 1297.00 1299.00 1299.00	C* CSR CSR CSR CSR CSR CSR CSR CSR	Lexot	IFNE "BLANK MOVE "BLANK MOVE"'' NOVE''' IFOE LAXOT ANDLAUANOT MOVE'''	XENOT 15 SENTAT 1	
1293.00 1294.00 1295.00 1296.00 1297.00 1299.00 1299.00 1299.00 1300.00		LexQT XeXQT XeXQT	IFNE "BLANK MOVE "BLANK MOVE '1' MOVELQXQT IFVE LANQT ANDLEUBAQT MOVE '	XeNQT 15 SERTET 1 XeNQT	
1293.00 1294.00 1295.00 1296.00 1299.00 1299.00 1299.00 1200.00 1301.00		Lexot	IFNE *ELANK NOVE *ELANK NOVE '1' NOVELQXQT IFGE LASQT ANDLEVEQT NOVE ' ' END IFND '1'	XeNQT 15 SERTAT 1 XeNQT SERTAT	
1293.00 1294.00 1295.00 1295.00 1295.00 1299.00 1299.00 1299.00 1300.00 1300.00 1300.00	C* C GRA CGAR C GRA CGAR C GRA CGAR C GRA CGAR C GRA CGAR	LexQT XeXQT XeXQT	IFNE "ELANK NOVE "ELANK NOVE "I'' NOVELL'' NOVELQUART IFGE LARGET ANDELEUBART NOVE '' IFGE LARGET NOVE '''	XeNQT 15 SERTET 1 XeNQT	Data Dictionary
1293.00 1294.00 1295.00 1295.00 1295.00 1297.00 1297.00 1299.00 1299.00 1300.00 1301.00 1302.00 1303.00 1304.00	C* C GRR CGRR CGRR CGRR CGRR CGRR CGRR C	LexQT XeXQT XeXQT	IFNE *ELANK MOVE *ELANK MOVE *I.* MOVE '1' MOVE LEXOF ANDLEVEQT MOVE '1' END IFEQ '1' MOVE '1' END	XeNQT 15 SERTAT 1 XeNQT SERTAT	
293.00 294.00 295.00 295.00 297.00 299.00 299.00 299.00 300.00 300.00 301.00 302.00 203.00 204.00 205.00	C* C GRA N C G	LexQT XeXQT XeXQT	IFNE *ELANK NOVE *ELANK NOVE *2' NOVEL2' NOVEL2' NOVEL2' NOVE ' IFNE ASOF NOVE ' IFNE	XeNQT 15 SERTAT 1 XeNQT SERTAT	Data Dictionary
293.00 294.00 295.00 296.00 299.00 299.00 299.00 209.00 300.00 301.00 302.00 302.00 203.00 204.00 205.00 306.00	C* 0.000 000 000 000 000 000 000 000 000	LexQT XeXQT XeXQT \$28TFT	IFNE *ELANK MOVE *ELANK MOVE *LANK MOVE '1' NOVE '1' NOVE LONGT NOVE '1' NOVE '1' NOVE '1' MOVE '1'	XENQT 15 GERTAT 1 NENQT GERTAT EMK, 07	Data Dictionary
1293.00 1294.00 1295.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1298.00 1301.00 1302.00 1302.00 1303.00 1305.00 1305.00 1305.00	C* CBR CBR CBR CBR CBR CBR CBR CBR CBR CBR	LexQT XeXQT XeXQT	IFNE *ELANK MOVE *ELANK MOVE *LANK MOVE '1' NOVE '1' NOVE LONGT NOVE '1' NOVE '1' NOVE '1' MOVE '1'	XENQT 15 GERTAT 1 NENQT GERTAT EMK, 07	Data Dictionary
1293.00 1294.00 1295.00 1295.00 1295.00 1299.00 1299.00 1299.00 1201.00 1201.00 1202.00 1203.00 1204.00 1205.00 1205.00 1207.00 1308.00	C* C#R CBR CBR CBR CBR CBR CBR CBR CBR CBR CB	LexQT XexQT XexQT \$2RTFT	IFNE *ELANK NOVE *ELANK NOVE *ELANK NOVEL2* NOVELQXXQT IFVE LAXQT NOVE ' ' END IFEQ '1' NOVE ' ' END IFEQ '1' NOVE ' L END END	XENQT 15 GERTAT 1 NENQT GERTAT EMK, 07	Data Dictionary
1293.00 1294.00 1295.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1200.00 1203.00 1203.00 1205.00 1205.00 1205.00 1205.00 1205.00	C* CSR CSR CSR CSR CSR CSR CSR CSR CSR CSR	LexQT XeXQT XeXQT \$28TFT	IFNE *ELANK NOVE *ELANK NOVE *ELANK NOVEL2* NOVELQXXQT IFVE LAXQT NOVE ' ' END IFEQ '1' NOVE ' ' END IFEQ '1' NOVE ' L END END	XENQT 15 GERTAT 1 NENQT GERTAT EMK, 07	Data Dictionary
1293.00 1294.00 1295.00 1295.00 1296.00 1299.00 1299.00 1299.00 1202.00 1202.00 1202.00 1202.00 1205.00 1205.00 1205.00 1205.00 1205.00 1205.00 1209.00 1209.00	C* C# CBR CBR CBR CBR CBR CBR CBR CBR CBR CBR	LexQT XexQT XexQT \$2RTFT	IPNE "BLANK NOVE "BLANK NOVE "L' NOVELQXXQT IPNE LAXQT ANDLENDART NOVE ' ' END IPEQ '1' NOVE ' ' END IPEQ '1' NOVE ' ' END END END END	XENQT 15 SERTET 1 XENQT SERTET EMX.07	Data Dictionary
1293.00 1294.00 1295.00 1295.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1201.00 1301.00 1302.00 1305.00 130	C* CSR CSR CSR CSR CSR CSR CSR CSR CSR CSR	LexQT XexQT XexQT \$2RTFT	IFNE *ELANK NOVE *ELANK NOVE *ELANK NOVEL2* NOVELQXXQT IFVE LAXQT NOVE ' ' END IFEQ '1' NOVE ' ' END IFEQ '1' NOVE ' L END END	XENQT 15 GERTAT 1 NENQT GERTAT EMK, 07	Data Dictionary
293.00 294.00 295.00 295.00 295.00 295.00 295.00 295.00 200.00 200.00 200.00 200.00 200.00 200.00 205.00 205.00 205.00 206.00 206.00 200.00 200.00 200.00 200.00	C* C GRR GRR GRR GRR GRR GRR GRR GRR GRR G	LexgT XexgT XexgT \$IRTUT Scrub and edit	IPNE "ELANK NOVE "ELANK NOVE "ELANK NOVE "I' NOVE 'I' NOVE 'I' NOVE 'I' NOVE 'I' NOVE 'I' END END END END END Item Type NOVELVEXTY	XENQT 15 SERTET 1 XENQT SERTET EMX.07	Data Dictionary
1293.00 1294.00 1294.00 1294.00 1294.00 1294.00 1294.00 1294.00 1294.00 1200.00 1302.00 1302.00 1302.00 1304.00 1304.00 1306.00 13106.00 1	C* CSR CSR CSR CSR CSR CSR CSR CSR CSR CSR	LexgT XexgT XexgT \$IRTUT Scrub and edit	IPNE "BLANK NOVE "BLANK NOVE "L' NOVELQXXQT IPNE LAXQT ANDLENDART NOVE ' ' END IPEQ '1' NOVE ' ' END IPEQ '1' NOVE ' ' END END END END	XENQT 15 SERTET 1 XENQT SERTET EMX.07	Data Dictionary
1293.00 1294.00 1294.00 1295.00 1295.00 1295.00 1295.00 1295.00 1200.00 1200.00 1202.00 1204.00 1204.00 1205.00 1205.00 1206.00 1205.00 1205.00 1205.00 1210.00 1211.00 1212.00	C* C GRA C G	Lexor Xexor Xexor Scrub and edit Set defau	IPNE "ELANK MOVE "ELANK MOVE "I' MOVELLY MOVELLY IPNE LARGT ANDLEURAGT MOVE ' END IPNE 'I' MOVE 'I' MOVE 'I' MOVE 'I' END END ITEM Type MOVELVDKTY Il value - Item Type	XENQT 15 SERTET 1 XENQT SERTET EMX.07	Data Dictionary
1293.00 1294.00 1294.00 1295.00 1295.00 1295.00 1295.00 1295.00 1295.00 1201.00 1201.00 1203.00 1203.00 1205.00 1205.00 1205.00 1211.00 1311.00 1311.00 1311.00 1311.00	C* C GRR CGRR CGRR CGRR CGRR CGRR CGRR C	LexQT XexQT XexQT \$ERTFT SCTUD and edit - Set defau QXXTY	IPNE "BLANK MOVE "BLANK MOVE "BLANK MOVE "L' MOVELQXQT IPNE LAXQT ANDLENDQT MOVE ' BND IPEQ 'L' MOVE ' END END IPEQ 'L' MOVELVDXTY Ilt value - Iten Type IPEQ "BLANK	XENQT 15 SERTET 1 XENQT SERTET EMX.07	Data Dictionary
1293,00 1294,00 1295,00 1295,00 1297,00 1297,00 1297,00 1297,00 1297,00 1200,00 1202,00 1202,00 1205,00 1205,00 1205,00 1205,00 1205,00 1205,00 1211,00 1211,00 1211,00 1212,00 1214,00 1214,00 1214,00	C* C GRR CGRR CGRR CGRR CGRR CGRR CGRR C	Lexor Xexor Xexor Scrub and edit Set defau	IPNE "BLANK MOVE "BLANK MOVE "L' MOVELLY MOVELOR IPNE LARGT ANDLEURAGT MOVE ' BND IPNE 'L' MOVE ' MOVE ' BND IPNE 'BND IPNE 'BLANK IPNE 'BLANK	XENQT 15 SERTET 1 XENQT SERTET EMX,07 QXXTY	Data Dictionary
1292.00 1294.00 1294.00 1294.00 1294.00 1294.00 1294.00 1294.00 1294.00 120	C* C GRR CGRR CGRR CGRR CGRR CGRR CGRR C	LexQT XexQT XexQT \$ERTFT SCTUD and edit - Set defau QXXTY	IPNE "BLANK MOVE "BLANK MOVE "BLANK MOVE "L' MOVELQXQT IPNE LAXQT ANDLENDQT MOVE ' BND IPEQ 'L' MOVE ' END END IPEQ 'L' MOVELVDXTY Ilt value - Iten Type IPEQ "BLANK	XENQT 15 SERTET 1 XENQT SERTET EMX.07	Data Dictionary

Figure 23–21 Maintenance Program without a Subfile (part 17)

1219.00 CG 1220.00 CG 1221.00 CG 1222.00 CG 1224.00 CG 1244.00 CG 1245.00 CG </th <th>R BH BHO, SH R R R R R R R R R R R R R R R R R R R</th> <th>IFNE *BLANK IFNE *NE* ANDEQ'*NE* ANDEQ'*LANK GETOM FLAE NOVE *1' NOVE *AIVAL BOAR *BIVAL BOAR *BIVAL NOVE *AIVAL NOVE *AIVAL NOVE *AIVAL NOVE *AIVAL</th> <th>840,1 840,54 840,54 85 08X77 840 840 840 840 847 933557 1 933557 1 933557 1 933557 1 933557 1 933557 1 933557 1 933557 1 933557 1 933557 1 933557 1 9355577 1 935557 1 935557 1 935557 1 9355577 1 935557 1 9355577 1 9355777 1 9355777 1 93557777 1 93557777 1 935577777 1 935777777777777777777777777777777777777</th> <th>4493</th>	R BH BHO, SH R R R R R R R R R R R R R R R R R R R	IFNE *BLANK IFNE *NE* ANDEQ'*NE* ANDEQ'*LANK GETOM FLAE NOVE *1' NOVE *AIVAL BOAR *BIVAL BOAR *BIVAL NOVE *AIVAL NOVE *AIVAL NOVE *AIVAL NOVE *AIVAL	840,1 840,54 840,54 85 08X77 840 840 840 840 847 933557 1 933557 1 933557 1 933557 1 933557 1 933557 1 933557 1 933557 1 933557 1 933557 1 933557 1 9355577 1 935557 1 935557 1 935557 1 9355577 1 935557 1 9355577 1 9355777 1 9355777 1 93557777 1 93557777 1 935577777 1 935777777777777777777777777777777777777	4493
1222.00 CS 1222.00 CS 1224.00 CS 1244.00 CS 1255.00 CS 1254.00 CS 1255.00 CS </td <td>R BH BHO, SH R R R R R R R R R R R R R R R R R R R</td> <td>Z-ADD2 DCMLE40 IFEQ //// NOVE // NOVE // NOVE // SED NOVEN440,2 SED NOVEN440,2 SED NOVE // SED IFEE *ALANK NOVE // SETOS RECENT NOVE // SETOS RECENT NOVE // NOVE // NOVE</td> <td>ем е40, ям ям дихту емх, 03 е40 еалу Слатот 1 смято 10 слатот</td> <td>81</td>	R BH BHO, SH R R R R R R R R R R R R R R R R R R R	Z-ADD2 DCMLE40 IFEQ //// NOVE // NOVE // NOVE // SED NOVEN440,2 SED NOVEN440,2 SED NOVE // SED IFEE *ALANK NOVE // SETOS RECENT NOVE // SETOS RECENT NOVE // NOVE	ем е40, ям ям дихту емх, 03 е40 еалу Слатот 1 смято 10 слатот	81
1222.00 CS 1222.00 CS 1224.00 CS 1224.00 CS 1224.00 CS 1224.00 CS 1224.00 CS 1224.00 CS 1228.00 CS 1229.00 CS 1239.00 CS 1234.00 CS 1244.00 CS </td <td>R BH BHO, SH R R R R R R R R R R R R R R R R R R R</td> <td>DUMLANG IFRQ '''' NOVE ''' NOVE ''' NOVE ''' NOVENANG', 2 NOVENANG', 2 NOVENANG', 2 NOVENANG', 2 NOVE 'N' NOVE 'N' NOVE 'N' NOVE 'N' NOVE ''' NOVE '''' NOVE '''' NOVE '''' NOVE '''' NOVE '''' NOVE ''''' NOVE ''''' NOVE ''''' NOVE ''''''''''''''''''''''''''''''''''''</td> <td>840,8M SM QMXTY &MX,03 840 GAV STATET 1 STATET 1 STATET 1 STATET</td> <td>81</td>	R BH BHO, SH R R R R R R R R R R R R R R R R R R R	DUMLANG IFRQ '''' NOVE ''' NOVE ''' NOVE ''' NOVENANG', 2 NOVENANG', 2 NOVENANG', 2 NOVENANG', 2 NOVE 'N' NOVE 'N' NOVE 'N' NOVE 'N' NOVE ''' NOVE '''' NOVE '''' NOVE '''' NOVE '''' NOVE '''' NOVE ''''' NOVE ''''' NOVE ''''' NOVE ''''''''''''''''''''''''''''''''''''	840,8M SM QMXTY &MX,03 840 GAV STATET 1 STATET 1 STATET 1 STATET	81
1222.000 CG 1224.000 CG 1222.000 CG 1222.000 CG 1222.000 CG 1224.000 CG 1224.000 CG 1224.000 CG 1224.000 CG 1244.000	Rdit alloved ym Rdit alloved ym R AAXTY AAXTY QXXTY C C C C C C C C C C C C C C C C C C C	IDEQ 1 NOVE * * 2000 1 2000 1 2000 2 2000 2000 2 2000 2000 2000 2000 2000 2000 200000 2000000	eM GMXTY GMXTY GMXI SARTUT 1 GMRIO 10 GERTUT	81
1224.00 CS 1225.00 CS 1225.00 CS 1227.00 CS 1244.00 CS 1244.00 CS 1244.00 CS 1247.00 CS 1255.00 CS 1254.00 CS 1255.00 CS 1256.00 CS 1256.00 CS 1256.00 CS </td <td>Ndit allowed we Ndit allowed we AMXTY AAXTY QXXTY QXXTY CAX,1 CAX,</td> <td>NOVE * * END ADD 1 END NOVERABED,2 END END END INSE *BLARK IFRE *BLARK IFRE *BLARK NOVE *BLARK NOVE *BLARK NOVE *1 EDD NOVE *1 IFRE * SIVAL EDD FOR ELLARK NOVE (2) NOVE *1 IFRE *1 NOVE *1 IFRE *1 IFRE *1 NOVE *1 IFRE *1 IF</td> <td>eM GMXTY GMXTY GMXI SARTUT 1 GMRIO 10 GERTUT</td> <td>81</td>	Ndit allowed we Ndit allowed we AMXTY AAXTY QXXTY QXXTY CAX,1 CAX,	NOVE * * END ADD 1 END NOVERABED,2 END END END INSE *BLARK IFRE *BLARK IFRE *BLARK NOVE *BLARK NOVE *BLARK NOVE *1 EDD NOVE *1 IFRE * SIVAL EDD FOR ELLARK NOVE (2) NOVE *1 IFRE *1 NOVE *1 IFRE *1 IFRE *1 NOVE *1 IFRE *1 IF	eM GMXTY GMXTY GMXI SARTUT 1 GMRIO 10 GERTUT	81
1225.00 GS 1227.00 GS 1227.00 GS 1228.00 GS 1229.00 GS 1229.00 GS 1229.00 GS 1229.00 GS 1227.00 GS 1227.00 GS 1227.00 GS 1228.00 GS 1228.00 GS 1238.00 GS 1240.00 GS 1244.00 GS 1255.00 GS 1255.0	Rdit allowed we AMXTY AMXTY CXXXTY CXXXTY B AMXX10 SUNTAT	ADD 1 BHD HOVERAB40,2 BHD BHD BHD BHD INNE *BLANK INNE *BLANK INNE *BLANK NOVEC'SEA NO	GMXTY GMXTY GAT GRATUT 1 GMARIO 10 GRATUT	81
1217.00 CC 1228.00 CC 1238.00 CC 1238.00 CC 1238.00 CC 1238.00 CC 1242.00 CC 1244.00 CC 1255.00 CC 1255.00 CC 1255.00 CC 1255.00 CC 1256.00 CC 1256.00 CC 1256.00 CC 1256.00 CC 1266.00 CC </td <td>Rdit alloved ve Rdit alloved ve R ABXTY R QXXTY P QXXTY R GMAX10 R GMAX10 R SERIAT</td> <td>DDD NOTERANG, 2 DND DND DND DND IMME - Item Type IFME *ALANN IFME *ALANN IFME *ALANN IFME *ALANN NOVE '1' NOVE '1' NOVE *ALANT NOVE *ALANT</td> <td>GMXTY GMXTY GAT GRATUT 1 GMARIO 10 GRATUT</td> <td>81</td>	Rdit alloved ve Rdit alloved ve R ABXTY R QXXTY P QXXTY R GMAX10 R GMAX10 R SERIAT	DDD NOTERANG, 2 DND DND DND DND IMME - Item Type IFME *ALANN IFME *ALANN IFME *ALANN IFME *ALANN NOVE '1' NOVE '1' NOVE *ALANT NOVE *ALANT	GMXTY GMXTY GAT GRATUT 1 GMARIO 10 GRATUT	81
1228.00 CS 1229.00 CS 1229.00 CS 1221.00 CS 1222.00 CS 1223.00 CS 1233.00 CS 1240.00 CS 1244.00 CS 1255.00 CS 1252.00 CS 1252.00 CS 1252.00 CS 1254.00 CS 1255.00 CS 1256.00 CS </td <td>Rdit slloved ve R A&XTY R A&XTY CoxsTY R QoxsTY R GMAX10 * ING1 R SERIAL SERIAL</td> <td>NOVERAGE , 2 BND BND BND END INNE *BLAAN IFNE *BLAAN IFNE *BLAAN IFNE *SLAAN NOVE 'SLAAN NOVE 'SLAAN NOVE *AIVAL ELGE NOVE *AIVAL END NOVE 'LAAN IFNE 'SLAAN NOVE 'LAAN IFNE 'LAAN IFNE 'LA END END END END</td> <td>eMX,03 840 garut 1 garut 1 garut 10 garut</td> <td>81</td>	Rdit slloved ve R A&XTY R A&XTY CoxsTY R QoxsTY R GMAX10 * ING1 R SERIAL SERIAL	NOVERAGE , 2 BND BND BND END INNE *BLAAN IFNE *BLAAN IFNE *BLAAN IFNE *SLAAN NOVE 'SLAAN NOVE 'SLAAN NOVE *AIVAL ELGE NOVE *AIVAL END NOVE 'LAAN IFNE 'SLAAN NOVE 'LAAN IFNE 'LAAN IFNE 'LA END END END END	eMX,03 840 garut 1 garut 1 garut 10 garut	81
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Figure 23–22 Maintenance Program without a Subfile (part 18)

1225 00	100	and defends only	e - Iten Unit of M			
1296.00 1297.00 1299.00 1299.00 1400.00 1401.00	24	Met Gersont Asto	e - ices onic of M	eswure		
1299.00	COR	OXX0M	IFEQ "BLASK			
1299.00	COR	DexUM	IFNE "BLANK			
1400.00	CER		MOVEDAXUM	440		
1401.00 1402.00 1402.00 1404.00 1405.00 1405.00 1405.00 1407.00 1409.00 1409.00 1409.00 1412.00 1412.00 1412.00	CON		NOVEA840	QXXXIM		
1402.00	CGR	040,1	IFRQ''''	2000		
1402.00	CRR	13/22/21/2	MOVE ' '	440,1		
1404.00	CGR		E-ADD2	WM.		
1405.00	CGR	#M	DOMLE40			
1405.00	CER	040,#H	IFEQ ****			
1407.00	CRR		NOVE ' '	240,#M		
1408.00	CGR		250			
1409.00	CGR		ADD 1	#M		
1410.00	CGR		MOVEA840,2			
1411.00	CHR		RND	COCCUM.		
1412.00	Card.		END			
1419.00	CAR		END D			
	C*		and a			
1415.00	24	Edit allowed well	ues - Ites Unit of	Manager and state		
1417 00		MOTE RITOAGG ANT	des - res oure de	Neseure		
1410.00 1419.00 1420.00	Cen	ABXUM	IFNE "BLASK			
1419.00	CER	ABXUN	IFEQ '*NB'			
1420.00	CGR	QXXX uM	ANDEQ"BLANK			
1421.00	CGR		NOVE '1'	@MX,03		
1422.00	CGR		SETON		47.92	
1422.00	CGR		ELOR.			
1424.00	CRR		MOVEAABXUM	640		
1425.00	CER		MOVE "RIVAL	@AV		
1426.00	CGR		EXER CP97			
1427.00	C*			1232525555		
1429.00	CER		NOVE / /	SERTST 1		
1429,00	CER		MOVE *BLANK	SWAR10 10		
1430.00	CGR	242702	MOVELQXXUM	ŚWAKIO		
1431.00	CER	aAV, 1	INNE "HIVAL			
1422.00	CER	SWR.SCLO	LORUSAAV		81	
1422.00	CGR	*2891	INDO .0.			
1424.00	CGR		NOVE '1'	SETET		
1425.00 1426.00 1427.00 1429.00 1429.00 1429.00	CSR	SERTET	IFEQ '1'			
1430.00	0.00	part in a	MOVE '1'	4MX, 07		
1430.00	00.0		ARTON		4792	
1479.00	008		END			
1440.00	008		END .			
1441.00	CER		END			
1442.00			END			
1442.00	C*.					
1444.00	·0*	Edit upper and 1	over range - Item V	Doit of Measure		
1445.00	-0*		Č.			
1446.00	CGR	2.60000	IFNE *BLASK			
1447.00	CGR		NOVE '1'	SERTST		
1448.00	CGR	5xxnw	IFGE LAXUM			
1449.00	CRN	Backare	ANDLEUMXUM			
1450.00	CER		MOVE / /	SERTAT		
1451.00	CGR		END			
1452.00	CGR	SERTET	1980 '1'	3.659.72		
1453.00	CRR		MOVE '1'	GMX, 07	110000	
1454.00	CER		SETON END		4793	
1455.00	CGR		END			
1456.00	CSR C*		CM2			
1459.00	20	pice from these th	efined Codes - Iter	. Date of Managers		
1459.00		ware those offer p	example upper - 10er	- unit of Measure		
1459.00	CER	日本文で向	IFNE *BLANK			
1461.00	CER	10000	CLEASIO005U			
1462.00	CER		MOVELGEXUM	SUCY.		
1462.00	CER		MOVE SAXUM	WURT		
1464.00	COR		MOVE GEELM	WUKY		
1465.00	COR		CRLL 'XDOOS'	3-383	91	
1455.00	C*				0.000	
1467.00	CGR		TATM	100050		
1469.00	CER	#122.8.8	1780 '1'			
1469.00	CER		NOVE '1'	dimit, 0.9		
1470.00	CRR		GETON .		4792	
1471.00	CGR		250			
1472.00	CGR		END			

Figure 23–23 Maintenance Program without a Subfile (part 19)

1472.00	C*				
1474.00	C*				
1475.00	C*	Scrub and edit	- Iten Category Cod	a 001	
1476.00	C*				
1477.00	CER:		WOVELVDX001	QXX001	
1479.00 1479.00		A			
480.00	C.	Set detault value	e - Item Category C	ode 001	
1421.00					
1482.00	CGR	QXX001 DeX001	1FRQ *BLASK IFNE *BLASK		
1482.00	CER		NOVEAD@X001	840	
1484.00	Can		NOVAA840	QXX001	
1485.00	Cak	840,1	IPEQ	Privata 1	
495.00	Cas		HOVE · ·	240.1	
497.00	CGR		Z-ADD2	WM .	
498.00	COR	100	DOMLE40		
499.00	CGR	240, MM	IFEQ		
490.00	CGR		HOVE ! !	@40,#M	
491.00	CER		END		
492.00	CRR		ADD 1	WM.	
493.00	CGR		WND		
494.00	CGR		HOVEA840,2	000001	
495.00	CGR		RND	10220-002	
496.00	CGR		END		
497.00	CGR		END		
499.00	C*				
499.00	C*	Edit allowed val	ues - Iten Category	Code 001	
1500.00	C* .				
501.00	CGR	A8X0-01	IPNE *BLASE		
1502.00	CGR	Added	IPBD ''NB'		
1502.00	CER	QXX001	ANDRO*BLANK		
1504.00	CER		HOVE '1'	@MK,02	
1505.00	CGR		GRITON		4993
506.00	CGR		RUSE		
1507.00	CGR		HOVERABX001	240	
1508.00	CGR		MOVE *RIVAL	@AV	
1509.00	CGR		20068 C997		
1510.00	C*				
1511.00	CSR		HOVE ' '	SERTET	1
1512.00	CGR		HOVE *SLANK	SWAX10 1	0
1513.00	CRR		wowm.gxxeel	\$MAX10	
1514.00	CGR	eAV,1	1998 *HIVAL		51255
1515.00	CER	\$MAX10 *IN91	LORUPEAV		91
1516.00	CER	*1891	IPBQ '0'		
1517.00 1519.00	CER		NOVE '1'	\$287ET	
1519.00	Cat	SERTST	IPRO '1'		
520.00	CRR	3 6 7 5 8 5	HOVE '1'		
1520.00	Cat		CREDIN	@MX,07	4892
1522.00	Can		END STOR		4993
522.00	Cak		END END		
524.00	Cast		2ND		
525.00	CBR		END END		
525.00	CHX C*		-01L		
527.00	C*	Edit upper and 1	ower range - Ites C	stanory Code 67	11
529.00	C*	TT AND A		2441 mag 11	
529.00	CER	L#X001	IFNE *BLASK		
520.00	CER		HOVE '1'	SERTET	
521.00	CER	oxx001	IFGE Laxool		
532.00	Can	000001	ASDLEUAXOOL		
522.00	CGR		HOVE / /	SERTET	
1524.00	CGR		RND		
1535.00	CER	SERIET	IFEQ '1'		
526.00	CRR	10000	NOVE '1'	@MX,07	
537.00	CGR		FETON		4893
539.00	CON		END		1994194
529.00	CGR		CRIE		
840.00	C*				
541.00	C*	Edit from User De	efined Codes - Item	Category Code	001
1542.00	C*				
542.00	CGR	780001	1PNE *BLANK		
544.00	CGR		CLEASI0005U		
1545.00	CGR		NOVELOBX001	WUEY .	
1545.00	CGR		MOVE Paxool	#128.2	
15400	CGR		MOVE QXX001	WURY	
1540.00	CGR		CALL '200005'		91
1549.00	C* .				

Figure 23–24 Maintenance Program without a Subfile (part 20)

1550.00	CER		FARM	100030	
1551.00	CGR	#U23.5	1FEQ '1'		
1552.00	CER		NOVE '1'	@MX,09	
1552.00	CS8.		GETON		4992
1554.00	CGR		END		
1555.00	CGR		END		
1556.00	C*				
1557.00	C*				
1550.00	C*	Scrub and edit	- Item Category Co	5e 002	
1559.00	C* CSR		MOVELVDN002	QXX002	
1561.00	C*		NOVELVEROUZ	Avvoor.	
1562.00		ALC: 10 10 10 10 10 10	e - Ites Category	1000 BR00	
1562.00	C*	Sec deingte Agin	e - Ites Category	005# 002	
1564.00	CER				
1565.00	CSR	QXX002 D#X002	IFRO "BLANK IFNE "BLANK		
1566.00	CER	DEADOR	MOVEADEX002	440	
1567.00	CGR		MOVER840	QXX002	
1569.00	CER	840,1	IPRO / ///	OXY005	
		a, 1	NOVE '		
1569.00	CSN			240,1	
1570.00	CBR	#M	Z-ADD2	#M	
1571.00	CER		DOMLE40		
1572.00	CGR	840,88	IMBD	100 C 100	
1573.00	CER		NOVE ' '	@40,#M	
	CER			6W	
1575.00			ADD 1	#M	
1576.00	CER		IND		
1577.00	CER		MOVER840,2	QXX002	
1578.00	CSN		END		
1579.00	CER		END		
1500.00	C9.8.		END		
1591.00	C*	120000000000000000000000000000000000000	A PARTING AND AND ADDRESS	SACES 33, 90 S.	
1592.00	C*	Edit allowed val	ues - Ites Category	y Code 002	
1597.00	C*				
1594.00	CGR	A#X002	1998 *BLASK		
1595.00	CGR		IPRO '*NB'		
1596.00	CGR	QXX002	ANDRO*BLANK		
1597.00	CER		NOVE '1'	@MX,02	
1599.00	CRR		SETON		4992
1599.00	CGR		RLOR		
1590.00	CGR		MOVER-MEXOD2	440	
1591.00	CGR		LAVIS STON	4AV	
1592.00	CGR		EXES CP97		
1597.00	C*				
1594.00	CGR		NOVE ' '	SERTET	
1595.00	CGR		MOVE "BLANK	SWREIO 10	
1596.00	CGR		MDVELQXX002	SWARLO	
1597.00	CGR	eAV, I	19NE *HIVAL		
1598.00	CGR	SNRK10	LORUPAAV		91
1599.00	CGR	*1991	1980 '0'		
1600.00	CER		NOVE '1'	SERTET	
1601.00	CGR		END		
1602.00	CER	\$28.TST	1FEQ '1'		
1602.00	CGR	5.000503 ×	MOVE '1'	@MX,07	
1604.00	CSR		GETON	2010/01/02/02	4993
1605.00	CGR		END		
1606.00	CGR		2010		
1607.00	COR		END		
1609.00	CER		END		
1609.00	C*				
1610.00	C*	Edit upper and 1	over range - Ites (Category Code 002	2
1611.00	C*		<u></u>		
1612.00	CER	140002	IFNE "BLANK		
1612.00	CER		MOVE '1'	GENTET	
1614.00	CGR	QXX002	IFGE Laxoo2	A	
1615.00	CER	QXX002	ANDLEUBN002		
1616.00	CGR	2410/803	MOVE / /	SERTET	
1617.00	CGR		END	0.000055000	
1619.00	CER	SERTET	IFEQ '1'		
1619.00	CER		MOVE '1'	@MK.07	
	Cas		ARTON		4992
			END		6 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
1620.00			END END		
1620.00	CER				
1620.00 1621.00 1622.00	CGR		END		
1620.00 1621.00 1622.00 1622.00	CGR. C*	ndia fam Nove P		- Antonio Arte -	105
1620.00 1621.00 1622.00	CGR. C*	Edit from Uwer D	END efined Codes - Ite	n Category Code (302

Figure 23–25 Maintenance Program without a Subfile (part 21)

1627.00	CER		CLEARIODOSU		
1620.00	COR		NOVELGEX002	WURY	
1629.00	CER		MOVE 5.82002	#U3.7	
1630.00	CER		MOVE QXX002	00182	
1621.00	CRR		CALL '2000.05'		91
1672.00	C*				
1632.00	CER	#0222	PARM	200090	
1625.00	Cat	* vann	HOVE '1'	4MX,09	
1626.00	0.00		SETON .	ens., us	4993
1627.00			END		
1620.00	008		ENT)		
1639,00	C*				
1640.00	C*				
1641.00	C* C*	Sorub and edit	- Item Category Cod	e 002	
1642.00	-C*				
1642,00			NOVELVDX003	Q×X003	
1644.00					
1645.00	C*	Set default valu	e - Item Category C	ode 003	
1545.00	C*				
1646.00 1647.00 1649.00	C# CBR CBR	0xx003	IFRO "BLANK IFRE "BLANK		
1649.00	Can	1000000	NOVEADAX002	440	
1649.90 1650.00	CON		NOVERDEX003	000003	
1651.00		840,1	IFRQ	Roussey	
1652.00			WOVE ' '	440,1	
1652.00	CGR		* - BUID	#M	
1654.00	CER	#M	DOMLE40		
1655.00		840,851	IFEQ		
1656.00	CGR		NOVE ' '	@40,#M	
1657.00	CGR		END		
1659.00	CGR		ADD 1	#M	
1659.00	CGR		\$19D		
1660.00	Cas		NOVER840,2	ÖKX003	
1661.00	CRR		BIND .		
1662.00	CGR		END		
1662.00	CSR. C*		END		
1665.00		mare allowed and		and the	
1666.00		Moit Bilowed Val	ues - Iten Category IPSE *BLASE	0008 003	
1567.00	CRR	A#X003	IFNE 'BLASE		
1669.00	CRR	A8X003	IPRO '*NB'		
1669.00	CER.	202003	ANDEQ" PLANK		
1670.00	CGR		MOVE '1'	@MX,02	
1671.00	CGS		SETON		5093
1672.00	CGR		ster		
1673.00	Cat		HOVERABX003	640	
1674.00	CGR		MOVE "HIVAL	@AV	
1675.00	CGR		E0068. C9.97		
1676.00			HOVE ' '	SERTET	
1677.00	CER		NOVE *BLANK	SWPEIO 10	
1679.00	CER		HOVELOXX003	SWRK10	
1690.00	COR	8AV, 1	IFNE "HIVAL	Surrey.	
1591.00	0.08		LOSUPAAV		91
1692.00	CER	*2891	IFEQ '0'		
1693.00	CGS	portion of the	HOVE '1'	SERTET	
1594.00	CER		2010		
1695.00	CGR	SERTET	1FEQ '1'		
1595.00	CRA		HOVE '1'	@MK,07	
1697.00	CGR		SETON		5093
1699.00	CGR		END		
1699.00	Cax		2ND		
1690.00	CGR		201D 2010		
1691.00			100		
1692.00	C* C*	Edit opper and	lower range - Item	Oskanner Onde Dr	13
1694.00	G*	ware abbar sug	score trange - 1000	reserved on the or	eec.y
1695.00	CER	140003	IFNE "PLANK		
1696.00	CER	100 C 10 C	MOVE '1'	SERTET	
	CGR	QXX003	100/000 T-0000-0-7		
1697.00	Cat	QXX003	ANDLEUBX003	SERTET	
		1000 B	NOVE / /	Second ().	
1698.00	CRR				
1699.00 1699.00 1700.00	CRR		BND		
1698.00 1699.00 1700.00 1701.00	CER CER CER	ŞERTST	1FE0 '1'		
1697.00 1699.00 1699.00 1700.00 1701.00 1702.00	CRR	\$ERTST		@ME,07	5093

Figure 23–26 Maintenance Program without a Subfile (part 22)

1704.00	CGR		END		
1705.00	CRR		25D		
1706.00	C*				
1707.00		Edit from Hang	Defined Codes - It	ant Cabacory Co.	d= 002
1709.00	.0*				
1709.00	CGR	782003	IFNE *BLANK		
1710.00	CGR		CLEASI0005U		
1711.00	CGR		NOVEL GOX002	8022	
1712.00			NOVE PAX003	HURT	
712.00	CER		MOVE GEROOD	WUXY	
713.00	CGR		CALL 'X0005'	#U8.2	91
					*1
725.00	C*			02308250	
716.00	CER	A21/01/21/11	PARM	100050	
716.00 717.00 719.00 719.00	CER	単切定表表	INBO '1'		
719,00	CGR		NOVE '1'	GMX, 0.5	
719.00	CGR		SETON		5092
720.00	CER		2ND		
721.00			28D		
722.00	Q#				
722.00	Ct				
724.00	C*	Scrub and edit	- Item Category Co	de 004	
725.00	C*				
726.00	CGR		MOVELVDX004	QKX0.94	
727.00	C*				
728.00	Ot.	Set default valu	a - Ites Category	Code 004	
729.00					
730.00	005	QXX004	IPRO *BLANK		
777 60	000		IFNE *BLANK		
721.00	Carl	084.009	MOVEADEX004	440	
732.00	CER		NOVER840	000004	
	Cart	2.027.27		Stycose .	
724.00		840,1	INDO	4447727	
725.00	CGA		NOVE .	040,1	
726.00	CGR		Z-ADD2	#M	
727.00 728.00 729.00	CGR	#M	DOMLE40		
738.00	CRN	#40,#M	IFRQ ''''		
739.00			MOVE / /	640,#M	
740.00	CGR		END		
741.00	CGR		ADD 1	#55	
742.00	CGR		END		
742.00	CER		MOVER840,2	QKX0.0-6	
744.00	CGR.		END	12000000	
745.00	COR		END		
745.00			280		
747.00					
748.00	G*	white allowed wal	see - Ites Categor	a cada and	
749.00		Beac Bastres The	and - room carrigon	A cross and	
750.00	CGR	A8X004	IFNE "BLANK		
150.00	Can	ABX004			
751.00	CRR		TERS '*NE'		
752.00	CER	5xx 0.04	ANDEQ"BLANK		
752.00	CGR		MOVE '1'	GMX, 03	
754.00	CGR		SETON		5193
755.00	CRR		ELGR		
756.00	CGR		MOVEAAaX004	440	
757.00	CER		AVIN* SYOM	WAB	
759.00	CRR		EXER C997		
759.00	-C*				
760.00	CP CPR CPR		MOVE 1 1	STRTAT 1	
761.00	CGR		NOVE *BLASE	SWRELD 10	E.
762.00	CGR		NOVELOXX004	SWRX10	
762.00		eav, 1	IFNE "RIVAL	1000 CO.	
764.00		SWRK10	LOCUPARY		91
765.00	CGR	*1891	7220 101		12751
766.00	CGR		IFEQ '0' MOVE '1'	SERTET	
767.00	CGR		END	4	
769.00	CER	SERTET	IFEO '1'		
769.00	CER	9 M.M. 2 M 2	MOVE '1'	&ME, 07	
				exe., 07	0.000
770.00	CGR		SETON		5192
771.00	CER		200		
772.00	CGR		2510		
772.00	CGR		END		
774.00	CER		END		
775.00	C*				
776.00	C*	Edit upper and	lowr range - Item	Category Code	004
777.00	C* .		TRACE OF BROOMS	CALCUM CONSULTS IN A	
778.00	CGR.	1.0004	IPNE "BLASK		
779.00	CGR	22.000	MOVE '1'	SERTET	
	CON	QXX004	IFGE Laxoo4		
100.001					

Figure 23–27 Maintenance Program without a Subfile (part 23)

1701.00	CGR	OXX004	ANDLEUBCOD4		
		1 - 10 - 10 - 10 - 10 - 10 - 10 - 10 -	NOVE / /	SERTET	
1793.00	CGR		END		
1794.00	CGR	SENTET	1990 '1'		
1795.00	Cat		HOVE '1'	@MK,07	
1795.00	CSR		SETON		5192
1797.00	CSR		201D		
1798.00	CGR		DISID		
1799.00 1790.00 1791.00	C*				
1790.00	C*	Edit from User	Defined Codes - It	em Category Co	da 004
1791.00	C*				
1791.00 1792.00 1792.00	CGR	702004	IFNE "BLANK		
1793.00	CGR		CLEARI0005U		
1794.00	CSR		NOVEL@#X004	#UEY	
1795.00	CSR		NOVE R4X004	WURT	
1796.00	CGR		NOVE QXX004	#OKA	
1797.00			CALL '200005'		91
1799.00	C*				
1799.00 1800.00 1802.00	CSR		PASM	100020	
1800.00	CSR	#V23.5	1980 '1'		
1902.00	CGR		HOVE '1'	@MX,09	
			SETON		5193
1903.00	CSR. CSR. CSR.		RND		
1904.00	CGR		RND		
1905.00	C*	300.000 100_00.000		10.0000000	
1907.00	C*	Scrub and edit	- Iten Category Co	de 005	
1909.00	C*				
1909.00	CGR		WOVELVDX005	QKX005	
1910.00	C*				
1911.00 1912.00 1912.00	C*	Set default valu	e - Iten Category	Code 005	
1912.00	C*				
1912.00	CSR	QXX005	IFRQ *BLANK		
1914.00	CGS	D00005	IFNE "RLANK		
1915.00	CGR		ROVEAD&X005	640	
1916.00	CGR		HOVER840	GXX005	
1917.00	CGR	#40,1	IFRQ		
1919.00			HOVE ' '	440,1	
1919.00	CSR CSR		2-ADD2	#M	
1920.00	CGR	#M	DOWLE40		
1921.00	0.08		1790		
1022.00	CER		HOVE ' '	440, MM	
1922.00	CGR		DND		
1924.00	CSR		ADD 1	#M	
1925.00	CSR		2000		
1925.00			NOVEMB40,2	QXX005	
1927.00	CGR		END		
1929.00	CGR		200D		
1929.00	CGR		END		
1870.00	C*				
1931.00	C*	Edit allowed val	ues - Item Categor	v Code 005	
1929.00 1929.00 1920.00 1921.00 1922.00	C*.				
1022.00 1024.00 1025.00	CGR	A8X005	IFNE "BLANK		
1924.00	CGR	A0X005	IFEO '*SE'		
1925.00	CGR	QXX005	ANDRO" BLANK		
1026.00	CGR		HOVE '1'	4MK,03	
1827.00	CGR		SETON	and the second second	5293
1939.00	CSR.		RLER		20020
1979.00	CG8.		NOVERABIO05	3840	
1940.00	CGR		HOVE "HIVAL	@AV	
1941.00	CGR.		BOORR CPPT	10.000	
1942.00	C*				
1842.00	CER		HOVE ' '	SURTET	
1944.00	CGR		HOVE *SLASE	SWEELO 10	1
1945.00	CGR		NOVELOXX005	SWRK10	2
1946.00	CGR	#AV, 1	IFME *RIVAL		
1947.00	CGR	SWEELO	LORUPAAV		91
1949.00	Cat	*1891	1950 '0'		
1849.00	CSR		HOVE '1'	SENTET	
			BND	Charles of Date	
		SURTET	IFEQ '1'		
1952.00	CGR	0.0000000000	HOVE '1'	@MX,07	
1952.00	CGR		SETON		5297
1954.00	CGR		END		156-2
1955.00	CRR		END		
1956.00	0.08		RND		
1957.00	Cak		END		

Figure 23–28 Maintenance Program without a Subfile (part 24)

1959.00	C*			
1959.00		Edit upper and	lower range - Iter	a Category Code 005
1960.00	C*			
1961.00	CGR	Laxoos	IFNE "BLANK	2000260
1962.00	CGR		MOVE '1'	SERTET
1962.00	CER	QXX005	IFGE Laxoos ANDLEUAXOOS	
1965.00		FY7042	MOVE 1 1	SERTET
1866.00			END	4.4.0.2.0.2
1967.00		SERTET	IPEO '1'	
1969.00			MOVE '1'	@MX,07
1969.00	CER		GETON	5292
2970.00	CGR		EMD 08E	
1971.00	CAR		END	
1972.00	C*	0-020032000000000	n de Sternen andere	
1973.00		Edit from User	Defined Codes - It	em Category Code 005
1974.00				
1075.00		380005	NRALE* SRRI	
1976.00	CER		CLEARICODSU	
1977.00	CER		NOVELEAXOOS	0022
1979.00	CGR		NOVE SEXCOS NOVE QXX005	HURT HURT
1979.00	CER		CALL 'X0005'	91
1990.00	Cak C*		Cherry . Yonog .	
1992.00	CER		RASH	100050
1992.00	CGR	#123.5	IFEQ '1'	
1994.00	CGR	a company	MOVE '1'	@MX.09
1995.00	CRR		SETON	5293
1996.00	CGR		END	
1997.00	CGR		END	
1000.00	C*			
	CER	200005	2NDGR	
1889.00				
	Q****			
1000.00	C			
1999.00 1990.00 1991.00 1992.00	C*****			/ - Translata Video Fields to Data Base
1990.00 1991.00 1992.00 1992.00	с• с• с•	Copy Connon Bul	broutine - Currency	
1000.00 1001.00 1002.00 1002.00 1004.00	c**** c* c*	Copy Common Bul	browtine - Currency	/ - Translata Video Pields to Data Base
1090.00 1091.00 1092.00 1093.00 1094.00 1095.00	C* C* C* C/C05	Copy Common Bul	browtine - Currency	
1000.00 1001.00 1002.00 1003.00 1004.00 1005.00 1005.00	c* c* c/cos c/cos	Copy Common Sul Y JDECFY, CO0151	broutine - Currenoj	/ - Translata Video Fields to Data Same
1990.00 1991.00 1992.00 1993.00 1993.00 1995.00 1995.00 1995.00	0* 0* 0* 0* 0* 0* 0*	Copy Common Bul 7 JDECFY, CO0151 Copy Common Bul	proutine - Currency	/ - Translata Video Fields to Data Base
1990.00 1991.00 1992.00 1993.00 1993.00 1995.00 1995.00 1995.00 1997.00		Copy Conner Bul Y JDBCPY,CO0151 Copy Conner Bul	proutine - Currency	/ - Translata Video Fields to Data Same
1990.00 1991.00 1992.00 1992.00 1995.00 1995.00 1995.00 1997.00 1999.00		Copy Common Bul Y JDBCFY, C00151 Copy Common Bul Y JDBCFY, C997	broutine - Currenoy broutine - Puild Al	/ - Tranelsta Video Fields to Data Base Llowed Values Mork Array
1990.00 1991.00 1992.00 1993.00 1993.00 1995.00 1995.00 1995.00		Copy Common Bul Y JDBCFY, C00151 Copy Common Bul Y JDBCFY, C997	broutine - Currenoy broutine - Puild Al	/ - Translata Video Fields to Data Base
1990.00 1991.00 1992.00 1993.00 1993.00 1995.00 1995.00 1995.00 1999.00 1999.00 1990.00 1990.00		Copy Common Bul Y JDBCFV, C00151 Copy Common Bul Y JDBCFY, C997	broutine - Currency broutine - Fuild Al	/ - Tranelsta Video Fields to Data Base llowed Values Mork Array
1990.00 1991.00 1992.00 1993.00 1993.00 1994.00 1995.00 1995.00 1995.00 1990.00 1901.00 1902.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Copy Common Bul Y JDECPY, CO0151 Copy Common Bul Y JDECPY, CS97 SUBBOUTDIE 2014	broutine - Currenoy broutine - Puild Al	/ - Translata Video Fields to Data Base llowed Values Mork Array
1990.00 1991.00 1992.00 1993.00 1995.00 1995.00 1995.00 1999.00 1999.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Copy Common Sul Y JDBCPY, C00151 Copy Common Sul Y JDBCPY, C997 SUBROUTINE S01	broutine - Currency broutine - Build A 1 - Opdate Data Ba	/ - Translata Video Fields to Data Base llowed Values Work Array
1990.00 1991.00 1992.00 1993.00 1993.00 1994.00 1995.00 1995.00 1995.00 1990.00 1901.00 1902.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Copy Common Sul Y JDBCPY, C00151 Copy Common Sul Y JDBCPY, C997 SUBROUTINE S01	broutine - Currency broutine - Build A 1 - Opdate Data Ba	/ - Translata Video Fields to Data Base llowed Values Work Array
1990.00 1992.00 1992.00 1992.00 1992.00 1992.00 1992.00 1992.00 1990.00 1990.00 1990.00 1992.00 1992.00 1995.00		Copy Common Sul Y JDBCPY, C00151 Copy Common Sul Y JDBCPY, C997 SUBROUTINE S01	broutine - Currency broutine - Build A 1 - Opdate Data Ba	/ - Translata Video Fields to Data Base llowed Values Mork Array
1990.00 1992.00 1992.00 1992.00 1995.00 1995.00 1995.00 1995.00 1902.00 1902.00 1902.00 1903.00 1905.00 1905.00	2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2	Copy Common Sul Y JDBCPV, C00151 Copy Common Sul Y JDBCPV, C997 SUBROUTINE S01 Processing: 1	broutine - Currency broutine - Build A 5 - Update Data Bas Update data ba action codes.	/ - Translata Video Fields to Data Base llowed Values Work Array
1990.00 1992.00 1992.00 1992.00 1993.00 1993.00 1993.00 1993.00 1993.00 1992.00 1992.00 1992.00 1993.00 1993.00 1993.00 1993.00 1995.00 1995.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Copy Common Sul 2 JDBCPY, CO0151 Copy Common Sul 2 JDBCPY, C997 SUDBOUTINE 201 Processing: 1. 2010	broutine - Currency broutine - Build A - Opdate Data Ba Opdate data ba action codes. appost	/ - Translata Video Fields to Data Base llowed Values Work Array
1200.00 1201.00 1202.00 1002.00 1002.00 1004.00 1005.00 1005.00 1002.00 1002.00 1002.00 1002.00 1004.00 1005.00 1005.00 1005.00	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Copy Common Sul Y JDBCPV, C00151 Copy Common Sul Y JDBCPV, C997 SUBROUTINE S01 Processing: 1	broutine - Currency broutine - Build A 9 - Update Data Bas Update data ba action codes.	/ - Translata Video Fields to Data Base llowed Values Work Array
1990.00 1991.00 1992.00 1993.00 1993.00 1995.00 1995.00 1995.00 1995.00 1995.00 1995.00 1995.00 1992.00 1902.00 1902.00 1905.00 1905.00 1905.00 1905.00 1905.00		Copy Common Sul 2 JDBCPV, CO0151 Copy Common Sul 2 JDBCPV, C997 SUBROUTINE 2014 Processing: 1. 	broutine - Currency broutine - Build Al 0 - Opdate Data Ba Opdate data ba action codes. BROOM	/ - Tranelsta Video Fields to Data Base llowed Values Work Array ma ma ma ma file based upon valid
1990.00 1991.00 1992.00 1992.00 1994.00 1995.00 1995.00 1995.00 1995.00 1995.00 1995.00 1995.00 1901.00 1901.00 1905.00 190	00000000000000000000000000000000000000	Copy Common Sul 2 JDBCPY, CO0151 Copy Common Sul 2 JDBCPY, C997 SUDBOUTINE 201 Processing: 1. 2010	broutine - Currency broutine - Build Al 0 - Opdate Data Ba Opdate data ba action codes. BROOM	/ - Translata Video Fields to Data Base llowed Values Work Array
1990.00 1991.00 1992.00 1992.00 1992.00 1992.00 1994.00 1994.00 1995.00 1995.00 1990.00 1990.00 1990.00 1990.00 1990.00 1990.00 1990.00 1995.00 190	00000000000000000000000000000000000000	Copy Common Sul 2 JDBCPY, CO0151 Copy Common Sul 2 JDBCPY, CS97 SUBROUTINE 201 Processing: 1. 	broutine - Currency broutine - Build A - Opdate Data Sa Update data ba action coder. BRGSR add record.	/ - Translata Video Fields to Data Base llowed Values Mork Array se file based upon valid Indicator value for action code :
1990.00 1991.00 1992.00 1992.00 1992.00 1992.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1992.00 1994.00 199	8 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3 3	Copy Common Sul 2 JDBCPV, CO0151 Copy Common Sul 2 JDBCPV, C997 SUBROUTINE 2014 Processing: 1. 	broutine - Currency broutine - Build A - Update Data Ba ution codes. Brout add record. IPRO '1'	r - Translata Video Fields to Data Base llowed Values Work Array se file based upon valid Indicator value for action code i assigned in copy module C0001.
1990.00 1991.00 1992.00 1992.00 1992.00 1994.00 1994.00 1994.00 1994.00 1994.00 1990.00 1990.00 1990.00 1990.00 1904.00 1905.00 190	00000000000000000000000000000000000000	Copy Common Sul 2 JDBCPY, CO0151 Copy Common Sul 2 JDBCPY, CS97 SUBROUTINE 201 Processing: 1. 	broutine - Currency broutine - Build A - Opdate Data Sa Update data ba action codes. BROOM add record. IPDOM (1) MNITESSP001	/ - Translata Video Fields to Data Base llowed Values Mork Array se file based upon valid Indicator value for action code :
1290.00 1291.00 1292.00 1292.00 1292.00 1292.00 1292.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1211.00 1212.00 1212.00		Copy Common Sul 2 JDBCPY, CO0151 Copy Common Sul 2 JDBCPY, CS97 SUBROUTINE 201 Processing: 1. 	broutine - Currency broutine - Build A - Update Data Ba ution codes. Brout add record. IPRO '1'	r - Translata Video Fields to Data Base llowed Values Work Array se file based upon valid Indicator value for action code i assigned in copy module C0001.
1990.00 1991.00 1992.00 1994.00 1994.00 1994.00 1994.00 1994.00 1995.00 1997.00 199		Copy Cosmon Sul 2 JDBCPY, CO0151 Copy Cosmon Sul 2 JDBCPY, CS97 SUBROUTINE 201 Processing: 1 S010 If add action, *IN21	broutine - Currency broutine - Build A - Opdate Data Ba Update data ba action codes. BROOM add record. IMNITESPECT END	r - Translata Video Fields to Data Base llowed Values Work Array se file based upon valid Indicator value for action code i assigned in copy module C0001.
1290.00 1291.00 1292.00 1292.00 1292.00 1292.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1215.00 121	00000000000000000000000000000000000000	Copy Cosmon Sul 2 JDBCPY, CO0151 Copy Cosmon Sul 2 JDBCPY, CS97 SUBROUTINE 201 Processing: 1 S010 If add action, If sN21	broutine - Currency broutine - Build A - Opdate Data Sa Update data ba action codes. BROOM add record. IPDOM (1) MNITESSP001	r - Translata Video Fields to Data Base llowed Values Work Array se file based upon valid Indicator value for action code i assigned in copy module C0001.
1990.00 1991.00 1992.00 1992.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1992.00 199	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Copy Common Sul Y JDECPY, CO0151 Copy Common Sul Y JDECPY, CS&7 SUDROUTINE S01 Processing: 1 S010 If add action, If add action, 	broutine - Currency broutine - Build A 0 - Update Data Ban Update data ba action codes. BROOM IPRO 11' MRITESP201 ERD On, update record.	r - Translata Video Fields to Data Base llowed Values Work Array se file based upon valid Indicator value for action code i assigned in copy module C0001.
1290.00 1291.00 1292.00 1292.00 1292.00 1292.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1212.00 121		Copy Cosmon Sul 2 JDBCPY, CO0151 Copy Cosmon Sul 2 JDBCPY, CS97 SUBROUTINE 201 Processing: 1 S010 If add action, If sN21	broutine - Currency broutine - Build Al 0 - Update Data Ba Update data ba action codes. Broost 	r - Translata Video Fields to Data Base llowed Values Work Array se file based upon valid Indicator value for action code i assigned in copy module C0001.
1990.00 1991.00 1992.00 1992.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1992.00 199		Copy Common Sul Y JDECPY, CO0151 Copy Common Sul Y JDECPY, CS&7 SUDROUTINE S01 Processing: 1 S010 If add action, If add action, 	broutine - Currency broutine - Build A 0 - Update Data Ban Update data ba action codes. BROOM IPRO 11' MRITESP201 ERD On, update record.	7 - Translata Video Fields to Data Base lowed Values Nork Array as file based upon valid Indicator value for action code i assigned in copy module C0001. 93
1990.00 1991.00 1992.00 1992.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1992.00 199		Copy Common Sul Y JDECPY, CO0151 Copy Common Sul Y JDECPY, CS&7 SUDROUTINE S01 Processing: 1 S010 If add action, If add action, 	broutine - Currency broutine - Build A - Update Data Ban update data ba action codes. BROOM 	7 - Translata Video Fields to Data Base lowed Values Nork Array as file based upon valid Indicator value for action code i assigned in copy module C0001. 93
1990.00 1991.00 1992.00 1992.00 1992.00 1992.00 1992.00 1997.00 190		Copy Common Sul 2 JDECPY, CO0151 Copy Common Sul 2 JDECPY, CS87 SUBROUTINE S01 Processing: 1 S010 If add action, If add action, If change action 	broutine - Currency broutine - Build A - Update Data Pau Update data ba action codes. BROOM 	7 - Translata Video Fields to Data Base lowed Values Nork Array as file based upon valid Indicator value for action code i assigned in copy module C0001. 93
1990.00 1991.00 1992.00 1992.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1992.00 199		Copy Common Sul 2 JDECPY, CO0151 Copy Common Sul 2 JDECPY, CS87 SUBROUTINE S01 Processing: 1 S010 If add action, If add action, If change action 	broutine - Currency broutine - Build A - Update Data Ban update data ba action codes. BROOM 	7 - Translata Video Fields to Data Base lowed Values Nork Array as file based upon valid Indicator value for action code i assigned in copy module C0001. 93
1990.00 1991.00 1992.00 1992.00 1992.00 1992.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1995.00 1995.00 1995.00 1995.00 1912.00 191	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Copy Common Sul 2 JDECPY, CO0151 Copy Common Sul 2 JDECPY, CS87 SUBROUTINE S01 Processing: 1 S010 If add action, If add action, If change action 	broutine - Currency broutine - Build Al - Update Data Ba - Update data ba action codes. BROS add record. IPEQ '1' MinTESS2001 ERU '1' UEATISS201 ERU '1' UEATISS201 ERU '1'	7 - Translata Video Fields to Data Base llowed Values Work Array es file based upon valid Indicator value for action code assigned in copy module C0001. 99
1890.00 1891.00 1892.00 1892.00 1894.00 1894.00 1894.00 1894.00 1894.00 1894.00 1894.00 1894.00 1894.00 1894.00 1904.00 191	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Copy Common Sul 2 JDBCFY, C00151 Copy Common Sul 3 JDBCFY, C0037 SUBROUTINE S01 Processing: 1. S010 If add action, <u>*1921</u> If change action -1922 If delete action	broutine - Currency broutine - Build A - Update Data Par Update data ba action codes. Broom - add record. INNO '1' MRITERSPOI END on, update record. INNO '1' UNATISION END on, delete record.	7 - Translata Video Fields to Data Base lowed Values Nork Array as file based upon valid Indicator value for action code i assigned in copy module C0001. 93
1990.00 1991.00 1992.00 1992.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1994.00 1904.00 1904.00 1904.00 1904.00 1904.00 1904.00 1904.00 1904.00 191	0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	Copy Common Sul 2 JDBCFY, C00151 Copy Common Sul 3 JDBCFY, C0037 SUBROUTINE S01 Processing: 1. S010 If add action, <u>*1921</u> If change action -1922 If delete action	broutine - Currency broutine - Build Al - Update Data Ba - Update data ba action codes. BROS add record. IPEQ '1' MinTESS2001 ERU '1' UEATISS201 ERU '1' UEATISS201 ERU '1'	7 - Translata Video Fields to Data Base llowed Values Work Array es file based upon valid Indicator value for action code assigned in copy module C0001. 99

Figure 23–29 Maintenance Program without a Subfile (part 25)

920.00	C*					
	CGR		NOVE SPOLS	GEAID	TIR	ocessing next record.
972.00	Can		EXCER GOOL	sense	Sin	nulates user pressing the Clea
922.00	C.K.		ECEN BOUL			were function key.
924.00	CGR	END010	ENDER.			
925.00	Ceres					
926.00	C*					
927.00	C*	SUBROUTINE SPDS	- Load dictionary	parameters.		etrieves all of the Data
929.00	C*					ictionary editing
939.00	C*	2002223	10.00 March 10.00		pa	trame ters for necessary
940.00		5999	DEGER		da	ata items used in the
941.00 942.00	C*					ogram and moves the
947.00	C*					formation into constant
944.00	C*	Dictionary param	eters for - Cost Car	ter.		elds
945.00	C*	22222222224 F02222			116	cidis
946.00	CGR		HOVE * BLANK	FRDTAI		
947.00	CGR		WOVEL' 2000'	PROTAI		
948.00	CGS		CALL 'XPRDOR'	26206263	81	Data Dictionary
949.00	C*			10.00065535	1.1.1.1	file server
950.00	CGR		PARM	199002		
951.00	CGR	78288	IFEQ '0' HOVE PROTAT	Texas	2.0	
952.00 954.00	CGR.		NOVE FROTAT	DENCC	1	
954.00 955.00	CER		NOVE FREC	CENCC	50	
955.00	CER		NOVE FROTAD	Gaxee	20	
957.00	Cas		NOVE FRODEC	PENCC	1	
958.00	CER		NOVELFRAY	FexCC	- 2	
959.00	CGR		NOVE FSST	NECCC	2	
960.00	CGR		HOVE FROME.	DENCC	40	
961.00	CGR		NOVE PRVAL	ABNCC	40	
962.00	CGR		HOVE FELVAL	LENCC	40	
963.00	CGR		HOVE PRUVAL	UBNCC	40	
964.00	CGR		NOVE FREDRS	WEXCC	30	
965.00	CSR		NOVE FRLS.	Jaxoc.	20	
966.00	098		NOVE PERSIX Z-ADD1	Naxor Haxor	20	
969.00	Cast		NOVE Paxoc	#A	110	
959.00	Cas		DO #A	84		
970.00	CGR		MULT 10	Hanco		
971.00	CER		END			
972.00	CER		280			
973.00	C*					
974.00	C*					
975.00	C*	Dictionary param	eters for - Descript	tion .		
976.00	Q#					
977.00			NOVE *BLASK	PROTAI		
979.00	CSR		WOVEL, XDG	PROTAI		#1
979.00 990.00	CSR.		CMLL, 'X0000E'			*1
991.00	Cast		PARM	199002		
982.00	CGR	73233	IFEQ '0'			
984.00	CER	· manne	NOVE FROTAT	TEXDS	1.1	
995.00	CGS		NOVE FREC	RECOR	- E	
996.00	CER		HOVE FROTAS	CEXDE	5.0	
987.00	CER		NOVE FEDTAD	GENDE	2.0	
998.00	CGR		NOVE FRODEC	Paxog	3	
999.00	CER		NOVELPPEY	SexDe	4	
990.00	CGR		NOVE FERT	March G	- E	
991.00	CGR		NOVE FROVAL	DexDG	40	
992.00	CGR		NOVE PRIVAL NOVE PRIVAL	LEXDE	40	
992.00 994.00	CER		NOVE PELVEL	Lande	40	
994.00 995.00	CER		NOVE FREDRA	WEXTIG	40	
996.00	Cas		NOVE FRLS	Jacobe	1	
997.00	CER		NOVE FERRIX	MaxDe	20	
998.00	CER		Z-ADD1	WEXDE	110	
999.00	CGR		NOVE FAXDS	88.	1000	
000.00	CRR		DO #A			
001.00	CGR		WULT 10	#axod		
002.00	CER		BND			
			#MD			
002.00	CSR.					

Figure 23–30 Maintenance Program without a Subfile (part 26)

2006.00 2007.00 2009.00	07	Dictionary pers	maters for - Date L	aet Ship		
2007.00	C.		NOVE *BLANK	PROTAT		
2009.00	CER		MOVEL' XDT'	PROTAL		
2010.00	Can		CMIT, XABODE,	PULLERI	91	
2011.00	C*					
	CGR		EARM	199002		
2012.00	CGR	PRESS	IFRO '0'			
2015.00	CGR		NOVE FEDTAT	TEXDT	2	
2016.00	CER		MOVE FREC	Decor T	1	
2017.00	CGR		NOVE FROTAS	CBEDT	50	
00.8.00	CGR		NOVE FROTAD	GENDT FEXDT	20	
019.00	CS8.		MOVE FRODEC	PEXDT	1	
1020.00	CGR		NOVELPS.GY	GENDT	4	
021.00	CGR		MOVE FSAT	DexDT	2	
			MOVE FROVAL MOVE FRVAL	AdxDT	40	
024.00	CER		NOVE FELVAL	LEXDT		
025.00	008		NOVE FRUVAL	UBXDT	40	
026.00	CGR		NOVE PREDMA	WENDT	20	
	CGR		NOVE FALS.	JEXDT		
029.00	CER		MOVE PASSIX	NEXT	1 20	
029.00	CER		Z-ADD1	#EXDT	110	
020.00	CGR		NOVE PAXOT	8A		
031.00	CSR		DO #A			
032.00	CG8.		MILT 10	#200D/T		
022.00	CGR		END			
024.00	C98.		END			
035.00	C*					
024.00 025.00 026.00 027.00 029.00	5					
037.00	S.	Dictionary pers	meters for - Item I	D		
039.00	CER		NOVE *BLANK	PROTAL		
040.00	CER		NOVEL'XIT'	PROTAL		
041.00	CER		CALL 'XP900E'	Principa -	91	
042.00	C*		Contra Areven			
042.00	CER		242M	1990-02		
044.00	CGR	PRESS	1980 '0'	000000		
046.00	CGR		MOVE FADTAT	Texit Dexit	1	
047.00	CGR		MOVE FREC	DEXIT	1	
2049.00	CGR		MOVE FRDTAG	CBKIT	50	
2049.00	CSN		NOVE FROTAD NOVE FRODEC	Gax17 Fax17	20	
00.0202	CGR		MOVE PRODEC	PEXIT	I	
2051.00	CGR		MOVELPS.CY	08017	4	
2052.00	CGR		NOVE FRRT	Dexit	2	
2052.00	CER		MOVE FROMAL MOVE FROMAL	DEXIT	40	
	CER			ABXIT		
055.00	CER		NOVE FRIVAL	LECIT	40	
2055.00	CER		NOVE FREDRA	Mary net	40	
	Can		NOVE FRIS	MEXIT MEXIT MEXIT MEXIT	20 I	
2059.00	CER		MOVE FERRIX	MEXIT	20	
	CGR		I-ADD1	HEXIT	110	
00.1301	CGR		MOVE FaxIT	50		
062.00	CRR		DO #A	Sec. a		
00.2300	CER.		MULT 10	##00.5T		
064.00	CGR		END			
065.00	CGR		END			
	C*					
2067.00	C*					
069.00	C*	Dictionary paras	sters for - Quantit	y - On Hand		
	C*		MANUAL AND AND A			
070.00	CGR		NOVE *BLANK	PROTAL		
071.00	CGR		CMTT, X5600E, WOART, XGL,	PROTAL	91	
072.00	Cen.		CMTT , XASOOE,		91	
074.00	CSR		ZASM	TRADOR		
2074.00	Can	73233	IFEQ '0'	1940.01		
2077.00	CER	P Date.	NOVE FADTAT	TENOT	1	
2079.00	CGR		NOVE FREC	2400T	1	
00.979	CGR		MOVE FROTAS	COMOT	50	
00.090	CGR		MOVE FROTAD	GENOT	20	
2021.00	CER		MOVE PRODEC	PEQKT	1	
2092.00	CGR		MOVELFSEY	PENOT	4	

Figure 23–31 Maintenance Program without a Subfile (part 27)

0022.00	0.08		WOUD DEST	880077		10	
082.00	CGR		NOVE FERT NOVE FEDVAL NOVE FEVAL	DexDT		40	
095.00	CRN		NOVE PRVAL	Add C		40	
096.00			NOVE FELVAL	5-800DT		40	
007.00	CGR		HOVE PRUVAL	TOMOT		40	
099.00	CSR		HOVE FREDME	Langt Uangt Hangt Hangt Hangt Hangt		30	
00,490			HOVE FRLR	2,8000.4		1	
090.00	CGR		NOVE PERSIX	SPECCOT.		20	
091.00	CER		Z-ADDI MOVE Faxor	Hangy HA		110	
092.00	CER		DO #A	80			
094.00	CER		WULT 10	#acor			
095.00	COR		END	a month of			
00.340	CGR		END				
00.70	C7				-		
99.90	C*						
00.99	C*	Dictionary para	meters for - Ites T	ype .			
100.00	C*						
101.00	CGR		NOVE *BLANK NOVEL'XTY'	PROTAI			
097.00 099.00 099.00 100.00 101.00 102.00 102.00 103.00 104.00	CER		MOART, XLA.	PROTAI			5.255
103.00	CGR		CWTT ,X0800E,				91
104.00	·						
105.00	CER	75255	PARM IFRQ '0'	198008			
104.00 105.00 106.00 108.00	COR	stant.	HOVE FEDTAT	78077	201		
109.00	Cas		WOMD DED/	1000070			
110.00	CER		NOVE FEDTAS	CREAT	50		
111.00				Свіхту свіхту рахту	20		
112.00			NOVE FRODEC	PECTY	1		
112.00	CGR		NOVELPERY	GENTY	4		
114.00	CGR		NOVE FERT	PERTY	2		
115.00	CGX		HOVE PROVAL	DeXTY ABXTY	40		
116.00	CGR		HOUR PRVAL	ABCTY	40		
117.00	CER		HOVE FELVAL	1.60777	40		
119.00	CER		NOVE FRUVAL NOVE FREDRE				
119.00	CGR			WEXTY			
120.00	CER		HOVE FEISIZ	360CTY 1680CTY	1		
122.00	CER		NOVE PENNIX I-ADD1	Max TY			
122.00	Call		NOVE FAXTY	80.75	110		
124.00			DO #A	an.			
125.00	CGR		WULT 10	#actry			
126.00	CGS		RND				
127.00	CER		2010				
129,00	C*						
129.00	C*						
130.00	-C*	Dictionary para			112.00		
131.00	-C*		meters for - Item O	nit of Meas			
			meters for - Item D	nit of Neae			
122.00	CGR		meters for - Item O MOVE *BLASK	nit of Meas		FROTAL	
133.00	CHR	0.000	MULT 10 END END MOVE for - Ites U MOVE *ELANK MOVEL XUM	nit of Meae		PRDTA1 PRDTA1	
133.00	CER		CALL 'XON'	nit of Meas		PRDTA1 PRDTA1	91
133.00	CER C*		CALL 'XONOE'			PRDTA1 PRDTA1	91
133.00	CER C*		CALL 'XS900E'	nit of Mease		PADTAI PADTAI	81
133.00 134.00 135.00 136.00 137.00	CER C# CER CER	PRERA	DAIN DAIN IFEQ '0'	199002		PADTAI PADTAI	81
133.00 134.00 135.00 126.00 127.00 139.00	Can Can Can Can Can Can		DALL'ION' DALL'IOPODE' DARM IPED '0' HOVE PRDTAT	IP9002 Texum		1	81
133.00 134.00 135.00 136.00 137.00 139.00 139.00	Can Can Can Can Can Can		CALL 'X9900E' PARM IPEQ '0' NOVE FRDTAT NOVE FRDT	199002 Texum Sexum		PROTAT	81
133.00 134.00 135.00 136.00 137.00 139.00 139.00 140.00			DALL'ION' DALL'IOPODE' DARM IPED '0' HOVE PRDTAT	TEXUM DEXUM CEXUM CEXUM		1	¥1
133.00 134.00 135.00 135.00 127.00 127.00 139.00 140.00 140.00 141.00			CALL 'XSPODE' PARM IFEQ '0' HOVE FREC HOVE FREC HOVE FREC	IPECOS TEXUM SEXUM CEXUM GEXUM		1 1 50	#1
133.00 124.00 135.00 126.00 127.00 139.00 140.00 141.00 142.00 142.00			ROVEL YON CALL (XS9002) DARM IFEQ '0' KOVE PADTAT NOVE PADTAS NOVE PADTAS	IPECOS TEXUM SEXUM CEXUM GEXUM		1 1 50	81
123,00 124,00 125,00 126,00 127,00 127,00 140,00 140,00 141,00 142,00 142,00 143,00			CALL 'SGOOD' CALL 'SGOOD' DAEM COME PROTAT NOVE PROTAT NOVE PROTAT NOVE PROTAT NOVE PROTAD NOVE PROTAD NOVE PROTAC	IPECOS TEXUM SEXUM GEXUM FEXUM FEXUM SEXUM		1 1 50 20 1 4 2	81
123,00 124,00 125,00 125,00 127,00 129,00 140,00 141,00 142,00 142,00 142,00 145,00			HOWEL FIGHT	IPECOS TEXUM SEXUM GEXUM SEXUM SEXUM SEXUM DEXUM		1 1 50 20 1 4 2	81
123,00 124,00 125,00 127,00 127,00 140,00 140,00 142,00 142,00 142,00 142,00 144,00 145,00 145,00 147,00			COLL YOR ODD' CALL YOR ODD' DATA DEDU '0' HOVE PROFAC HOVE PROFAC HOVE PROFAC HOVE PROFAC HOVE PROFAC HOVE PROFAC HOVE PROFAC HOVE PROFAC HOVE PROFAC	IPG005 Texum Sexum Gexum Fexum Sexum Sexum Sexum		1 1 50 20 1 4 20 1 4 40 40	81
123,00 124,00 125,00 125,00 127,00 140,00 141,00 142,00 142,00 142,00 142,00 142,00 144,00 145,00 145,00			NOVEL 2004 DALL 2004 DALL 2004 DALL 2004 DALL NOVE FAUTAN NOVE FAUTAN	IPG005 Texum Sexum Gexum Fexum Sexum Sexum Sexum		1 1 50 20 1 4 2 40 40 40	81
123,00 123,00 125,00 125,00 127,00 129,00 140,00 141,00 142,00 142,00 142,00 144,00 145,00 145,00 146,00 148,00 148,00			HOWE FRUTAL HOWE FRUTAL	IPG005 Texum Sexum Gexum Fexum Sexum Sexum Sexum		1 1 50 20 1 4 2 40 40 40 40	81
133,00 135,00 135,00 137,00 140,00 141,00 141,00 142,00 143,00 145,000 145,000 145,000 145,000 145,000 145,000 145,000 145,000 145,000 145,000 145,000 145,000 145,000 145,000 145,000			HOWELTSISH CALL SIGNOUS FARM IPED 10-1 HOWE FROMAN HOWE FROMAN HOWE FROMAN HOWE FROMAN HOWE FROMAN HOWE FROMAN HOWE FROMAN HOWE FROMAN HOWE FROMAN	IPG00E TEXUM REXUM CEXUM REXUM REXUM REXUM REXUM REXUM REXUM REXUM REXUM		1 50 20 1 4 2 40 40 40 40 20	81
133,00 134,00 135,00 137,00 137,00 140,00 142,00 142,00 142,00 145,00 145,00 145,00 146,00 146,00 149,00 150,00			HOWELTSISH CALL SIGNOUS FARM IPED 10-1 HOWE FROMAN HOWE FROMAN HOWE FROMAN HOWE FROMAN HOWE FROMAN HOWE FROMAN HOWE FROMAN HOWE FROMAN HOWE FROMAN	IPG00E TEXUM REXUM CEXUM REXUM REXUM REXUM REXUM REXUM REXUM REXUM REXUM		1 50 20 1 4 2 40 40 40 40 20 2	81
173,00 174,00 174,00 177,00 177,00 140,00 142,00 142,00 142,00 144,00 145,00 145,00 145,00 145,00 145,00 145,00 145,00 145,00 145,00 145,00 145,00 150,000 150,000	CER CER CER CER CER CER CER CER CER CER		NOVEL 2:08 CALL ::080002' DAIM IPRO 10' NOVE PROTAT NOVE PROTAT NOVE PROTAT NOVE PROTAT NOVE PROTAT NOVE PROTAT NOVE PROTAT NOVE PROTAL NOVE PROTAL NOVE PROTAL NOVE PROTAL NOVE PROTAL NOVE PROTAL NOVE PROTAL NOVE PROTAL NOVE PROTAL NOVE PROTAL	IPGCOE TEXUM BECUM GEULM GEULM FEXUM FEXUM FEXUM FEXUM FEXUM FEXUM FEXUM FEXUM FEXUM FEXUM		1 50 20 1 4 20 40 40 40 40 20 20	81
123.00 124.00 125.00 127.00 127.00 140.00 142.00 142.00 142.00 142.00 145.00 155.00	CER CER CER CER CER CER CER CER CER CER		HOWELTSISH CALL SIGNOUT FAIN IPED 10-1 HOWE FROTAT HOWE FROM HOWE FR	IPROD TEXUM BENUM GENUM GENUM BENUM BENUM BENUM LENUM LENUM LENUM BENUM BENUM BENUM		1 50 20 1 4 2 40 40 40 40 20 2	н
113,00 1134,00 1134,00 1134,00 1137,00 1140,00 1142,00 1142,00 1142,00 1142,00 1144,00 1145,00 1144,00 1144,00 1144,00 1144,00 1144,00 1144,00 1144,00 1150,00 1150,00 1150,00	CER CER CER CER CER CER CER CER CER CER		NOVEL SIGN CALL SIGNODE' DAIM IPEDQ 10' NOVE PROTACT NOVE PROTACT	IPGCOE TEXUM BECUM GEULM GEULM FEXUM FEXUM FEXUM FEXUM FEXUM FEXUM FEXUM FEXUM FEXUM FEXUM		1 50 20 1 4 20 40 40 40 40 20 20	81
113,00 113,00 113,00 113,00 113,00 113,00 113,00 1140,00 1142,00 1142,00 1142,00 1144,00 1144,00 1144,00 1144,00 1144,00 1144,00 1144,00 1144,00 1145,00 1152,00 1152,00 1152,00 1152,00	Can Can Can Can Can Can Can Can Can Can		HOWEL YEAR CALL YEARONE ' DAIM IPED '0' HOWE PADTAR HOWE PADTAR	IPRODE TEXUM DECUM CECUM CECUM DECUM DECUM DECUM DECUM DECUM DECUM DECUM DECUM NECUM NECUM NECUM NECUM NECUM		1 50 20 1 4 20 40 40 40 40 20 20	
123.00 124.00 125.00 127.00 127.00 127.00 140.00 142.00 142.00 142.00 144.00 144.00 144.00 144.00 144.00 144.00 144.00 145.00 150.00 152.00 152.00 155.00 155.00			HOWEL SIGN CALL SIGNODE' DAIM IPRO 10' HOWE PROTAT HOWE PROTAT	IPROD TEXUM BENUM GENUM GENUM BENUM BENUM BENUM LENUM LENUM LENUM BENUM BENUM BENUM		1 50 20 1 4 20 40 40 40 40 20 20	81
123.00 124.00 125.00 125.00 127.00 127.00 140.00 140.00 142.00 142.00 142.00 144.00 144.00 144.00 145.00 145.00 146.00 146.00 146.00 146.00 146.00 146.00 146.00 146.00 146.00 152.00 152.00 152.00 152.00	Can Can Can Can Can Can Can Can Can Can		HOWEL YEAR CALL YEARONE ' DAIM IPED '0' HOWE PADTAR HOWE PADTAR	IPRODE TEXUM DECUM CECUM CECUM DECUM DECUM DECUM DECUM DECUM DECUM DECUM DECUM NECUM NECUM NECUM NECUM NECUM		1 50 20 1 4 20 40 40 40 40 20 20	

Figure 23–32 Maintenance Program without a Subfile (part 28)

160.00 161.00 162.00	C*					
\$1.00	C*	Dictionary pers	meters for - Item C	stegory Code 0	01	
162.00	C.					
162-00	CSR		MOVE "ELANK	PROTAI		
.64.90	CMR		MOART, XOOT,	PROTAI		
165.00	CHR		CMTT ,X06005,			91
00.88	C*			10000		
66.00	CGR	2/28/28/2	TARM	1990.02		
98.00	CER	FREE.F.	1540 .0.	1 2 C 1 2 C 2	1.1	
70.00	CGR		NOVE FROTAT	7400001	1	
71.00	CGR		MOVE FREC	Caxcol	2	
72.00			MOVE FROTAS	CMCCOl	5.0	
72.00			NOVE FROTAD	Gampol.	20	
74.00			NOVE PRODEC	P52001	1	
175.00	CGR		MOVELPSEY	G20001	4	
76.00	CGR		MOVE FRAT	Hattool RESCOL Aattool Lattool Uattool Mattool Sattool Sattool Mattool	2	
77.00	CHR		MOVE PROVAL MOVE PROVAL	Daxoel.	40	
70.00 79.00	CGR		MOVE FRVAL	A80001	40	
19.00	CER		MOVE FALVAL	1400001	40	
79.00 90.00 91.00	CEN		MOVE PROVAL MOVE PREDMA	U80001	40	
91.00	CBR		MOVE FREDMS	Namo ol	20	
\$2.00	CGR		MOVE FALS	240001	1	
82.60	068		NOVE PARKIX	Maxmel	20	
83.00 84.00 85.00	008		Z-ADD1	#accel		
06.00	007		NOVE FUEL001	NA.	440	
	0.00		NOTE PERCON	50		
00.39	CER		DO KA MULT 10	W20001		
97.00	CER		MULT 10	#20002		
98.00	CGR		2ND			
19.00	CGR		END			
00.00 01.00 02.00 03.00 04.00 05.00 06.00	C*		EKD EKD			
1.00	C*					
2.00	C*	Dictionary para	meters for - Item C	stegory Code 0	02	
3.00	C*	14149 Profession 2005				
4.00	CGR		MOVE "BLANK	PROTAL		
5.00	CGR		MOVEL 120021	PROTAL		
00.34	CGR		CALL 'XPRODE'			91
7.50	C#					
00.90	CER CER CER CER		FARM	199002		
0.00	007	73,25.5	INDO ,0,	10000		
8.00	Carl	973.67.S	NOVE FROTAT	Marco and	12	
12.00	CER		NOVE FROTAT	7800002 880002	- 20	
14.00	CHR		NOVE PERC	342X002		
02.00	-C98.		MOVE FROTAG	CBX002 GBX002 FBX002	5.0	
04.00	CGR		MOVE FROTAD MOVE FRODEC	G8000-0-2	20	
05.00	CGR		MOVE PRODEC	F80002	1	
06.00	CGN		NOVELPASY	GB00-0-2	4	
00.70	CBR			NEX002 DEX002 AEX002	2	
2 M 1 1 1 1	-Call 17.		MOVE FROMAL	D&X002	40	
	CGR		NOVE FRVAL	A20002	40	
20.00				14000-0-2	40	
11.00	CER		MOVE FRUWAL	Lax002 UBX002 Hax002 Jax002	40	
12.00	COR		NOVE PREDMA	NEXTOR	20	
12.00	CER		NOVE FRLA	200000	1	
14.00	Can		APPENDIX PROVIDEN	100000 A	20	
			NUME PROSTA	242400-02		
15.00			Z-ADD1	#200002	110	
16.00	CSR		NOVE PAXOD2	#A.		
17.00	A-		DO #A			
19.00	CGR		MULT 10	等者000002		
19.00	CGR		END			
20.00	CER		END			
21.00 22.00 27.00 24.00	Ct					
22.00	C*					
27.00	C*	Dictionary para	ameters for - Item C	stedory Code 0	02	
14.00	C+	, part				
28.00	00.0		NOVE *BLANK	PROTAL		
25.00	Carl.		NOVEL ' XOO2 '	PHOTAL		
				PARATA 1		
27.00	CER		CMTT ,X55005.			91
28.00	C*			12122		
29.00	CMR	10.533 65.03	PARM	1980.02		
10.00	Can	学校定法表	1525 .0.			
	CGN		MOVE FROTAT	780062	1	
222.00	CGR		MOVE FREC	2400003	1	
00.000			MOVE FADTAG	C80002	50	
22.00	CER					
00.00	CER		MOVE PROTAD	G80003	20	
22.00 23.00 24.00 25.00 26.00	CSR CSR CSR		MOVE FROTAD	780003 280003 080003 680003 780003	20	

Figure 23–33 Maintenance Program without a Subfile (part 29)

2227.00	CER		NOVELPSEY	- P8X002			
2237.00 2238.00 2239.00	CGR		NOVE FERT NOVE FEDVAL	PEX002 NEX002			
2229.00	CGR		HOVE FROMAL	040002	40		
			HOVE FRVAL	A80003 1400003 U80003	40		
			NOVE PRIVAL	1400002	40		
	CRR		HOVE PROVAL				
2243.00 2244.00	CER		HOVE FREDMS. HOVE FRES.	MEX003	20		
2245.00	CER		HOVE PENNIX	5480003			
2246.00	Cat		Z-ADD1	##X002			
2247.00	COR		HOVE Fax003	#A.			
2249.00	Call		DO #A				
2249.00	CGR		NULT 10	##X003			
2250.00	CGR		END				
2251.00	CGR		END				
2252.00	C*						2
2250.00 2251.00 2252.00 2252.00 2255.00 2255.00 2256.00 2257.00 2259.00	S			2.533333.22			
2254.00	2.	Dictionary pars	uneters for - Item (category cos	58 004		
22222.00	000		NOVE *BLANE	FROTAL			
2255.00	COR		HOVEL '2004'	PROTAI			
2259.00	CER		CALL 'XPRODE'				91
2259.00	C*						
2260.00	CRR		PARM	199002			
2261.00	CGR	F7.27.7	13.805 .0.				
2263.00	CEL		NOVE PROTAT	T\$X004	1		
2264.00	COL		MULTINE BUILDING	R\$0004			
2265.00	CGR		NOVE FROTAG	C8X004	50		
2266.00	CGR		NOVE FROTAD	G80004 F80004	20		
2267.00	Cat		NOVE PRODEC NOVELPREY				
2269.00	CRR		WOVELPEST WOVE FEET	G80004	2		
2270.00	CRR		HOVE PROVAL	D20004			
2271.00	CRR		HOVE FR.VAL	ABX004			
2272.00	CER		NOVE FALVAL	Lexcod4	40		
2273.00	CRR		HOVE FRUNAL	U80004	40		
2274.00	CRR		NOVE PREDER	NECCO4			
2275.00	CGR		NOVE FALS	240004	1		
2276.00	CGS		NOVE FRANKLY	1480004	20		
2277.00	CER		Z-ADD1	#20004	110		
2238,00	- and 7.		NOVE PAX004	#A			
2279.00	CRR		00 #A	100000			
2220.00	008		WOLT 10	#80004			
2292.00	008		2010 2010 uneters for - Item (
2292.00	C*		ED:D				
2294.00	C*						
2295.00	C*	Dictionary para	meters for - Item (Category Cos	e 005		
2295.00	C*						
2207.00	CRR		NOVE *SLASS	PEDTAI			
2299.00	CGR		WOVEL 120-05 1	PHOTAI			
2299.00	CRR		CWTT ,X08005.			91	
2290.00	C*						
2291.00	CRR.	73233	DANM IPED '0'	196003			
2292.00 2294.00	Cast	FRANK		780005	141		
2294.00	CRR		HOVE FROTAT	200005 200005	1		
2296.00	Cas		HOVE FROTAS	Cattoos	30		
2297.00	CER		NOVE FROTAD	Gattoos			
2299.00	CER		NOVE PRODEC	780005	1		
2299.00	008		NOVELFASY	G8X005			
2200.00	CER		NOVE FRAT	840005			
2201.00	COR		HOVE FROMAL	Dexcos	40		
2302.00	CEX		NOVE FRVAL	A80005	40		
2302.00	CGR		NOVE FRIVAL	L&X005 U&X005			
			MOVE FRUNKL	180005	40		
2205.00	CRR		NOVE PARONA	NECCOS	20		
4.475.57			NOVE FALS.	340005 Max005			
2307.00	CRR		HOVE PANNIX				
2209.00	CER		Z-ADD1 MOVE Paxoos	#20005	110		
	CER		DO #A	80			
2210.00	CER		NULT 10	##X005			
2712.00	Cat		RND RND	##A003			
2717.00	CER		2ND				

Figure 23–34 Maintenance Program without a Subfile (part 30)

4.00	C*					
8.00	C+	Set subroutine	warmetion flag.			
7.00	C*					4 4000 10 1
8.00	CGR		MOVE '1'	\$998	1	Assures \$998 will only !
9.00	C*					executed once
0.00	CGR	200999	ENDER.			
1.00	C****			**************		
2.00	C*					
2.00	C*	SUBBOUTINE SAAS	- Housekeeping			
4.00	C*					
5.00	C*					
6.00	C*		Load video scr			
7.00	C*	2	Retrieve screet	n title data are	a, test	
8.00	C*		for unauthorize	ed access, cente	r video	
9.00	C*			to video screen		
0.00	C*		Initialize key			
1.00	C*		Load roll keys			
2.00	C*		Passed paramete			
2.00	C*	6	Load error mea	sage array.		
4.00	C*	1.141.00				
5.00	CGR	\$999	RECER			
6.00	C*					
7.00	C*				-	
8.00	C*	Required progra	n peremeters.			
9.00	C*					P
0.00	CGR	*29757	FLIAT			Parameters passed to
1.00	C*	Fageed Paramete				program
	C*	Fassed Farmiete	r - Item ID			
0.00	CRR		TARM	882.17		
1.00	CeX.		PARK	882.17		
.00	C*	Month in deligned	reference - Ite	- 70		
.00	C*	NOVE CO Incerne	- rererence - rce	- 10 ·		
00	CGR		MOVE ##XIT	VEX.FT		
.00	C+		NOTE SEALS	Tense		
00	C*	Test for suto i	and the French Law			
.00	C*	Test for suco 1	iquiry resocion.			
.00	CER	VDXIT	1782 *BLASS	0.0000000000000000000000000000000000000	10	Set auto-inquiry if
.00	CGR		MOVE 111	SAUTO	1	 information is
.00	CGN		END	1.		passed
00	C*					
.00	C*					
00	C*	Load video scre	in text.			Retrieves vocabulary
.00	C#					overrides
00	CGR.		MOVELaapila		0.1	Orde Londo (home VTV Gal
0.0	CER		2-ADD025	PEVIXS	30	Only loads these VTX fiel
00	C/000	PY JD@CPY, CD44C			20	displayed on the video
.00	C*					instead of all 144.
.00	C*					
.00	C*	Ney list for -	Cost Center Secur	sty		
.00	C*			and a second	Ca	mposite keys are defined
.00	CGR	M88201	92.2.0T	100000000		5.50 5 8
.00	CGR	0.000000000	KFLD	NOUGER	her	2
.00	CGN		SPLD	MEPILE		
0.0	CGR		SPLD	MEMCUT		
.00						
00	C*					
	C*	Key list for	IUM Item Master P	ile		
.00		25				
.00	C*		SI.LOT			
.00. .00	CGR	5xx.30.7		QXXIT		
.00 .00 .00	CSR CSR		NFLD		100 million 100	
.00 .00 .00 .00	CSR CSR C*	Öxx.a.r				
.00 .00 .00 .00	CSR CSR C*					
00.00 000 000 000 000	CSR CSR C* C*					
.00		Load roll key u	oper and lower ke	y values.		ing *LIKE more and more
.00	CSR CSR C* C* C* C* C*	Load roll key u	oper and lower ke	y values. SHUKRY -	Us	ing *LIKE more and more,
.00	CER C* C* C* C* C* C* C*	Load roll key u	oper and lower ke DEFM QXXIT DEFM DRUKEY	y values. SHUKEY SHOKEY	Us	ing *LIKE more and more, textially for work fields.
1.00 1.00 1.00 1.00 1.00 1.00 1.00		Load roll key u	oper and lower ke DEFN OXXIT DEFN SAURRY MOVE *LOWAL	y values. SAUKEY SAUKEY SAUKEY	Us	
.00		Load roll key u PLINE *LINE	oper and lower ke DEFN OXXIT DEFN SKURY MOVE "ALL'9"	y valoes. SRUKEY SRUKEY SRUKEY SRUKEY	Us esq	
2.00		Load roll key u	oper and lower ke DEFN OXXIT DEFN SKURY MOVE "ALL'9"	y values. SAUKEY SAUKEY SAUKEY	Us esq	

Figure 23–35 Maintenance Program without a Subfile (part 31)

00.795	C*	acted thereis	messages erray.					Error measage
288.00	COR		NOVE '0001'		EME, 01		Inv Action	-numbers from
209.00	COR		NOVE ! 0002 !		EMX, 02	_	Inv Eav	
290.00	COR		HOVE (0002 *		EMX. 02		Inv Blanks	Data Dictionary
391.00	CGR		MOVE 100041		2505,04		Inv Date	
292.00	CGR		SIVE + 0005 *		EMK, 05		Inv Next Mbr	
292.00	CGR		MOVE 100071		EMK, 06		In Use	
294.00	CGR		MOVE '0025'		EME, 07		Inv Values	
00.249	CGR		NOVE (0026 1		EMK, 09		Inv MCU	
296.00	CGR		MOVE (0027)		EMK, OP		Inv Deec Ttl	
00.749	CAR		MOVE (00521		EMK, 10			
00.993	C*							
199.00	C*	Service and and						
00.00	C+	Load invalid act	ion code array.			I	ockent action a	code function used
601.00	C*							
602.00	CGR		NOVEA' '		BUAC .	V	with the Program	n Generator
602.00	C*							-
604.00	C*	11.11.1.4.11.0.0.11.1.4.1.1.1						
105.00	C*	Load system date	÷				Use the T	IME
06.00	C*						feature to	
00.00	CER		TIME		\$W3X12			
00.00	CGR		NOVE \$MS.K12		\$\$2DT	60	all date for	rmats
409.00	CGR		NOVE \$\$2DT	1.1	SIDAT	e		
410.00	CGR		HOWEL' - SYEWAL	1.1	#FFMT	4		
11.00	CGX		NOVEL*BLASKE	- 9300	*IDAT *TPMT	87		
	CSR		WOWELL' "JUL					
412.00	CER		MOVEL '* NONE		#222	7		
414.00	Cak		CALL X0028	1.12	SERTET	1		
	CMR.		CALL ADDIN					
416.00	Cet		PASM		*FIDAT			
18.00	CER		PARM		WEDAT			
19.00	CER		DARM		STONT .			
20.00	Cak		PARM		STONT -			
21.00	CGR		PASM		WEEP			
22.00	Can		FARM		CRATET			
27.00	COR		NOVE WEIDAT			60		
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	CER	END333	ENDER			1000		62
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Figure 23–36 Maintenance Program without a Subfile (part 32)

24

User Spaces

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.

For example:	CALL	'J98CKOBJ'	81
		(******	
	PARM	PSOBJ	
	PARM	PSLIB	
	PARM	PSTYP	E
	PARM	PSMID	Č.
	PARM	PSAUT	\$0.
	PARM	PSERR	

Figure 24–1 Program J98CKOBJ

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.

For example:	CALL	'QUSCRTUS'	81
		0.000.000	
	PARM	#SPNAM	
	PARM	#SPATT	
	PARM	#SPSIZ	
	PARM	#SPVAL	
	PARM	#SPAUT	
	PARM	#SPTXT	

Figure 24–2 Create User Space

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	'XOOSPC'	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
	27454555	1000000000	
	PARM	#SPNAM	
	PARM	#SPPOS	
	PARM	#SPLGH	
	PARM	#SPV AL	
	PARM	#SPAUX	

PARM (Length))	Description 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.		
#SPNAM (20)			
#SPPOS	The starting position in your user space where the informatio		
(4 binary)	will begin. It must be the first byte and must have a value greater than 0.		
#SPLGH	The length of the information that is being written to your use		
(4 binary)	space. This field is user-defined, but it must be greater than 0.		
#SPVAL	The actual information to be written to your user space. The		
(* user defined)	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	
В	A- 30 bytes -"	B "	A- 41 bytes - B	

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.

CALL	'QUSRTVUS'	81
PARM	#SPNAM	
PARM	#SPPOS	
PARM	#SPLGH	
PARM	#SPREC	
	PARM PARM PARM	PARM #SPNAM PARM #SPPOS PARM #SPLGH

Figure 24–6	Retrieve User Space Command	
-------------	-----------------------------	--

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	The starting position in your user space where the information	
(4 binary)	will begin. It must be the first byte and must have a value greater than 0.	
#SPLGH	The length of the information that is being retrieved to your	
(4 binary)	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	The variable that will receive the information from your user	
(* user defined)	space.	

25

User Indices

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.

Key "		A Data "	
		Q.	

Figure 25–1 User Index Data Structure

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
	10000	00000000	
	PARM	PSOBJ	
	PARM	PSLIB	
	PARM	PSTYPE	
	PARM	PSMID	
	PARM	PSAUT	
	PARM	PSERR.	

PARM (Length)DescriptionPSOBJ (10)The name of your user index.		
		PSLIB (10)
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.

For example:	CALL	'XOOIDX'	81	
	12010121	2010/20		
	PARM		#0XNAM	
	PARM	'D'	#0XACT	
	PARM	'EQ'	#0XRUL	
	PARM	'1'	#0XKLN	
	PARM	*BLANK	#0XKEY	
	PARM		#0XRLN	
	PARM		#0XREC	
	PARM		#0XSTA	

Figure 25–3 Clearing All Records with a Blank Key

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 Commane

For example:	CALL	'QUSCRTUI'		81
	2222	0000000		
	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.

For example:	CALL	'X00IDX'	81
	22222	222222	
	PARM	#0XNAM	
	PARM	#0XACT	
	PARM	#0XRUL	
	PARM	#0XKLN	
	PARM	#0XKEY	
	PARM	#0XRLN	
	PARM	#OXREC	
	PARM	#0XSTA	

Figure 25–5 User Index Server program

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).

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

The following records are to be loaded into your user index:

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	СНО	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	'XOOIDX'	
	PARM		#0XNAM 20
	PARM	ʻI'	#0XACT 1
	PARM	'EQ'	#0XRUL 2
	PARM		#OXKLN 30
	PARM	*FIRST'	#0XKEY120
	PARM		#OXRLN 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 "GT".

Figure 25–7 User Index Server Set to Retrieve the Next Record

CALL	'X00IDX'	
PARM		#0XNAM 20
PARM	Ί'	#0XACT 1
PARM	'GT'	#0XRUL 2
PARM		#OXKLN 30
PARM		#0XKEY120
PARM		#0XRLN 30
PARM		#0XREC120
PARM		#0XSTA 1
	PARM PARM PARM PARM PARM PARM PARM	PARM PARM 'I' PARM 'GT' PARM PARM PARM PARM

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).

For example:	CALL	'XOOIDX'	
	PARM		#0XNAM 20
	PARM	ʻI'	#OXACT 1
	PARM	'GT'	#0XRUL 2
	PARM		#0XKLN 30
	PARM		#0XKEY120
	PARM		#OXRLN 30
	PARM		#0XREC120
	PARM		#0XSTA 1

Figure 25–8 User Index Server Set to Retrieve Data in Descending Order

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	'XOOIDX'	
	2002		
	PARM		#0XNAM 20
	PARM	ʻI'	#0XACT 1
	PARM	'LT'	#OXRUL 2
	PARM		#OXKLN 30
	PARM		#OXKEY120
	PARM		#OXRLN 30
	PARM		#0XREC120
	PARM		#0XSTA 1

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36.00	E* PROGRAM TABLES AND J		2020022336000		139.002.0000.000			
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38.00	E	1000						
39.00	E ENK 64	4	Error	DOM				
40.00	K (M) (4)	1	EFFOI	NRG				
41.00	E BEE 64	4	Error					
42.00	E 2DV 40	1	pflt	wrk				
43.00	E 01\$ 99	1	save	Indicato	r			
44.00	E BC 256	1	Liter	al work				
45.00	E.							
46.00	z.	10	- 10 - 8M					
47.00	x* copy composite Member	ar ior co	amon subrouti	ne C0001				
48.00	E* E/COPY JEECPY, E0001							
49.00	E/COPY JDECPY, BOOOL							
51.00	**							
51.00	в* в* copy мember for conj в*	osite m	mon subrout4	ne coors				
53.00	E.							
54.00	w American interactions, managing							
55.00	E							
56.00	E.							
57.00	s* copy Member for comp	posite co	amon subrouti	ne C0042				
58.00	E.							
59.00	E/COPY JDECPY, BOO42							
60.00	E							
61.00	E.			10000				
62.00	s [*] copy member for comp	posite co	anon suprouti	ne C997				
63.00	E*							
64.00	E/COPY JDECPY, E997							
66.00	I							
67.00	1* PROGRAM INPUT SPECIS							
68.00	I*							
69.00	1*							
70.00	1* Data structure	to Load v	video screen v	reart				
71.00	1.	240 (D09 (TC)		10000				
72.00	IDSTR7 DS		240					
73.00	I		1 16 V1 41 56 V1	1003				
74.00	I		41 56 VI	CX002				
75.00	I		61 92 VI					
76.00	I		121 150 VI					
77.00	I		161 165 VI					
78.00	I		201 203 VI	20006				
	I*							
79.00 80.00 81.00	I* I/COPY JDECPY,ICODSINK I/COPY JDECPY,ICODSNE I/COPY JDECPY,ICODSPECS							

Figure 25–10 User Index Server report (part 1)

1.	money transferry a	on compatible service	an and see	tine -	and the second		
1.	copy Member f	or composite commo	a subrou	Line - C	0090		
1.							
	DECPY, IOASC						
1.	nate streature	on for unor inter					
1.		es for user index.					
I.							
1.	· Entry nec	ord					
1.	ancry nec	AL 4					
IDSIDX1	DE						
I	L/M		1	1 515		Record for	mat to
ī				6 \$10		be used wit	
ī			7				
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Î			49	51 \$18		a Data Stru	icture
ĩ			52	54 518			
1.					102201		
I.	 Entry Len 	gth, same/Library,	Teart				
1.		gen, nano, erenny,					
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II	PINDE	K OTEMP	- ÷	24 \$1100		containing th	
II		stration index	25	44 \$17E		_record length	, User
1.	20010010	CARLES HILL AND AND A	63			Index name,	
I.	 partial k 	ays 1 & 2, full un	ima kee	FEVI.			
1.	- Marcial K	ayo 1 a 2, 1011 Un	ridge rel	ABIL.		User Index	
I	DG			124	1	description te	xt
I I	1		R 1	40518877		2021-02-02-02-02-02-02-02-02-02-02-02-02-02-	
III	6		B 1	4051KEY			
III	18			120\$1KEY			
1.1	10			100200000			
1.	nato etmatur	e for sile servers		Data stru	cture de	fining three pos-	sible kev
1.	Daca sciuciui	a lot bile ververs					
IDS0010	E DEF0010					is the full key le	
1050010	a Derodio			DSIDX1	to see w	hich fields are k	ey fields whe
	DECPY, 19800E					\$1KEY2 (1-6)	
	DECPY, ICOUSU					bytes) are being	useu.
				STRET	rf1-10		
	DECPT, LOOKPERV			SILCT	L[1-10		
I.						2	
1							
C* P	GAINLINE PROGRA	м					
C* P		м					
C. P	GAINLINE PROGRA	м -					
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1* 1* C* b C* C* C* C* C* C* C* C* C* C*	GINLINE PROGRA	N kaeping. Exem 5999 					
	FIGURE PROGRA	N kaeping. <u>xxen coss</u> 					
	GLIMLINE PROFFA PTOCESS house If LR CO., end *IMLR	N keeping. Exen 5999 	5 0.				
	GLIMLINE PROFFA PTOCESS house If LR CO., end *IMLR	N kaeping. Exem 5999 	5 0.				
	GINLINE PROFFA Process bouse if LR CO., end *INLR if automatic	N kaeping. <u>Exen 2000</u> I program. <u>CAREQ'1'</u> inquiry set, proce	BO.	ry.			
	GLIMLINE PROFFA PTOCESS house If LR CO., end *IMLR	N keeping. Integram. CAEBQ'1' CAEBQ'1'	5 0.	ry.			
	GINLINE PROFFA Process bouse if LR CO., end *INLR if automatic	Kaeping. <u>Exen 6999</u> <u></u> I program. <u>CABEQ'1'</u> <u></u>	BO.	ry.			
	GINLINE PROFFA Process bouse if LR CO., end *INLR if automatic	N keeping. Integram. CAEBQ'1' CAEBQ'1'	BO.	ry.			
1	GLINLINE PROGRAM PTOCESS house If LR CO, end *INLR If automatic \$AGTO	Kaeping. <u>EXEN 6999</u> <u></u> I program. <u>CABEQ'1'</u> inquiry set, proce <u>CAEEQ'1'</u> <u>KND</u>	so 	ry.			
1	GLINLINE PROFFA PTOCESS bouse If LR CO. end *INLR If automatic \$40770 Begin normal	N kaeping. Exem 5999 	100. ss inqui J.	ry.			
	GLINLINE PROFFA PTOCESS bouse If LR CO. end *INLR If automatic \$40770 Begin normal	Kaeping. <u>EXEN 6999</u> <u></u> I program. <u>CABEQ'1'</u> inquiry set, proce <u>CAEEQ'1'</u> <u>KND</u>	100. ss inqui J.	ry.			
1	GLINLINE PROFFA PTOCESS bouse If LR CO. end *INLR If automatic \$40700 Regin normal	N kaeping. Exem 2000 Program. CAREQ'1' inquiry set, proce CAEEQ'1' EXED Program processing	100. ss inqui J.	ry.			
1	GLINLINE PROFFA PTOCESS bouse If LR CO. end *INLR If automatic \$40770 Begin normal	N kaeping. Exem 5999 	100. ss inqui J.	ry.			
1	GLINLINE PROFFA PTOCESS bouse If LR CO., end *INLR If automatic \$40700 Begin normal *INLR	N kaeping. Exem soos program. CAREQ'1' inquiry set, proce CAREQ'1' EXED program processing DOWEQ'0'	so ss inqui so j.	7 - ry. 23	24		
1	GLINLINE PROFFA PTOCESS bouse If LR CO., end *INLR If automatic \$40700 Begin normal *INLR	N kaeping. Exem 2000 Program. CAREQ'1' inquiry set, proce CAEEQ'1' EXED Program processing	so ss inqui so j.	7 - ry. 23	24		
	GINLINE PROFIL PTOCESS house If LR CO, end *INLR If automatic \$AUTO Begin normal *INLR If subfile pa	kaeping. <u>Exen 6099</u> I program. <u>CABEQ'1'</u> inquiry set, proce <u>CAEEQ'1'</u> <u>EXED</u> program processing DOWEQ'0' ge display not set	so ss inqui so j.	7 - ry. 23	24		
	GLINLINE PROFFA PTOCESS bouse If LR CO., end *INLR If automatic \$40700 Begin normal *INLR	Kaeping. Kaeping. Kxen 6999 iprogram. CAREQ'1' inquiry set, proce CAREQ'1' KND program processing DOWEQ'0' ge display not set IPEQ 0	BOX Ses inqui SOI SOI Soi Soi Soi Soi Soi Soi Soi Soi Soi Soi	ry. 	24		
	GINLINE PROFIL PTOCESS house If LR CO, end *INLR If automatic \$AUTO Begin normal *INLR If subfile pa	Kaeping. <u>Exem 6999</u> <u>Inogram.</u> <u>CABEQ'1'</u> <u>Inquiry set</u> , proce <u>CAEEQ'1'</u> <u>IND</u> program processing DOWEQ'0' ge display not set <u>IPEQ</u> 0 <u>EXED</u> 1	BOX Ses inqui SOI SOI Soi Soi Soi Soi Soi Soi Soi Soi Soi Soi	7 - ry. 23	24		
	GINLINE PROFIL PTOCESS house If LR CO, end *INLR If automatic \$AUTO Begin normal *INLR If subfile pa	Kaeping. Kaeping. Kxen 6999 iprogram. CAREQ'1' inquiry set, proce CAREQ'1' KND program processing DOWEQ'0' ge display not set IPEQ 0	BOX Ses inqui SOI SOI Soi Soi Soi Soi Soi Soi Soi Soi Soi Soi	ry. 	24		
	GINLINE PROFIL PTOCESS house If LR CO, end *INLR If automatic \$AUTO Begin normal *INLR If subfile pa #GFRHO	Kaeping. Exem 2000 Program. CAREQ'1' 	so ss inqui so 	7 - ry. bfile pa	24		
	GINLINE PROFIL PTOCESS house If LR CO, end *INLR If automatic \$AUTO Begin normal *INLR If subfile pa #GFRHO	Kaeping. <u>Exem 6999</u> <u>Inogram.</u> <u>CABEQ'1'</u> <u>Inquiry set</u> , proce <u>CAEEQ'1'</u> <u>IND</u> program processing DOWEQ'0' ge display not set <u>IPEQ</u> 0 <u>EXED</u> 1	so ss inqui so 	7 - ry. bfile pa	24		
	GINLINE PROGRAM PTOCESS bouse If LR CO, end "INLR If automatic \$AUTO Begin normal "INLR If subfile pa #GFENO If subfile pa	keeping. <u>xxsn soso</u> program. <u>CASEQ'1'</u> inquiry set, proce <u>CASEQ'1'</u> <u>xxn</u> program processing powmgro' ge display not set <u>IPACO1</u> <u>xxn</u> ge empty, don't di	so ss inqui so 	7 - ry. bfile pa	24		
	GINLINE PROFIL PTOCESS house If LR CO, end *INLR If automatic \$AUTO Begin normal *INLR If subfile pa #GFRHO	N kaeping. Inrogram. CAREQ'1' CAREQ'1' CAREQ'1' CAREQ'1' EXHO Program processing DowEQ'0' ge display not set IPED 0 Z-ADD1 EXHO ge empty, don't di IPEE 0	so ss inqui so 	7 - ry. bfile pa	24 ge disp		
	GINLINE PROGRAM PTOCESS bouse If LR CO, end "INLR If automatic \$AUTO Begin normal "INLR If subfile pa #GFENO If subfile pa	Keeping. Kxen 5999 CASEQ'1' CASEQ'1' CASEQ'1' CASEQ'1' CASEQ'1' DONEQ'0' ge display not set DONEQ'0' ge display not set ge empty, don't di IPLE 0 	so ss inqui so 	7 - ry. bfile pa	24		
	GINLINE PROGRAM PTOCESS bouse If LR CO, end "INLR If automatic \$AUTO Begin normal "INLR If subfile pa #GFENO If subfile pa	N keeping. Exem 5999 program. CAEBQ'1' inquiry set, proce CAEBQ'1' EXEM program processing DOWEQ'0' ge display not set IPEQ 0 Z-ADD1 EXEM ge empty, don't di IPEE 0 SECS	so ss inqui so 	7 - ry. bfile pa	24 ge disp 38		
	GINLINE PROGRAM PTOCESS bouse If LR CO, end "INLR If automatic \$AUTO Begin normal "INLR If subfile pa #GFENO If subfile pa	Keeping. Kxen 6099 iprogram. cAsEQ'1' inquiry set, proce cAsEQ'1' program processing DONEQ'0' ge display not set IPEQ 0 ge empty, don't di IPEE 0 sETO 0 ELEE 0 SETO 0	so ss inqui so 	7 - ry. bfile pa	24 ge disp		
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	GINLINE PROGRAM PTOCESS bouse If LR CO, end "INLR If automatic \$AUTO Begin normal "INLR If subfile pa #GFENO If subfile pa	Keeping. Kxen 6099 	so ss inqui so 	7 - ry. bfile pa	24 ge disp 38		

Figure 25–11 User Index Server report (part 2)

160.00	C.					
161.00	C		WRITEVINDER1			
162.00	c		WRITEVINDERC MOVE '1'	DIASS		
164.00	U U		EXER GOOL	GEAID		
165.00	C*		LASA SOOL			
166.00	č.					
167.00	C*	Load data fie	ald dictionary param	neters jone cyc	le only).	
168.00	C*				0.0000000000000000000000000000000000000	
169.00	C	\$998	CASEQ' '	6998		
170.00	C*					
171.00	C		END			
172.00	C*	2010 10 10 10 10 10 10 10 10 10 10 10 10	a di kana mana ka			
173.00	C*	segin video s	screen read processi	ng		
174.00	C*					
175.00	C		SETOF READ VINDER		299301	
176.00	c				9998	
177.00	C C		Z-ADDO Z-ADDO	**RROW **RCOL		
179.00	č*		2-4200	**ncon		
180.00	Č*	of wideo read	i timed out, end pro	action		
181.00	č.	II TIGEO LEM	a crand oue, and pro	Gram.		
182.00	e	* 11199	CAREQ'1'	80.7	LE	
183.00	C*					
184.00	C	GUAID	CASSOFFEOJ	BOJ	LE	
185.00	C*					
186.00	C*					
187.00	C*	if valid fund	ction key pressed, p	process and ret	urn.	
188.00	C*					
189.00	C	* 1815	INED .1.			
190.00	C		EXSE SOORS			
191.00	C.			10000		
192.00	C.	* INT N	CAREQ'1'	80.7		
193.00	C*	* 1993 5	CA950' 1'	1210		
	C.	- 1815	the second se			
195.00	C.		END	1222		
195.00	c.		END			
198.00	C+	sdit the acti	on codo			
199.00	C.	DOLL COM HCCI	con code.			
200.00	ē		EXER COOOL			
201.00	C*					
202.00	C*.					
203.00	C*	If and of job	prequested, end pro	ogran.		
204.00	C*					
205.00	C	GUAID	CARRONT	80.3		
206.00	C.					
207.00	C*	3130-2412-2420-2010-2				
205.00	C.	if clear scre	en requested, proce	ass and return.		
209.00	C*		and the second of the			
210.00	c	GRAID	INSO \$PCLS			
211.00	č.		EXER GOOL			
212.00	c.		GOTO MND			
215.00	C.					
215.00	c		END			
216.00	C.					
217.00	č.	Load subfile	records.			
218.00	C*		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
219.00	C		EXER GOOS			
220.00	C*	1994 1997 1997 1997 1997 1997 1997 1997				
221.00	C*	if add or cha	ange, validate all v	deo input.		
222.00	C*			10.254		
223.00	C*					
224.00	C.					
225.00	C	• 1893	CREED, 0.	2005		
226.00	C*	TRUE.				
227.00	C	2230				
228.00	C.					
229.00	C.	of no ormane	and not inquiry, up	viate file		
230.00	C*	II ID MITOIS	and not reductly, of	AND TIM.		
232.00	c.	* 1993	INED 'O'			
232.00	č.	* 1824	CASEQ' 0'	9010		
234.00	c	444.6				
235.00	č		END			
236.00	è		END			
237.00	C*	neturn for ne				
235.00	C*					
239.00	C	2230	TAG			
	C*					
240.00						
240.00 241.00 242.00	C.		nessage in line 24.			

Figure 25–12 User Index Server report (part 3)

44.00	12				
245.00	C		NOVELGVL24E ELSE	VDL24	
246.00	0 0		NOVELOVL24N	VDL24	
248.00	č		KND		
249.00	č.				
250.00	c		END		
251.00	C*				
252.00	C	BOJ	TAG		
253.00	C*				
254.00	C*	(1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997) (1997)			
255.00	c.	END NAINLINE			
256.00	Cases		·····		
255.00	C*				
259.00	C*	CODY CODEOR O	ubroutine - Edit Ad	tion code	
260.00	C.	and a conserve a	AL	and the second se	
261.00	C/COPS	JDECPY, COOOL			
262.00	C	*****	····		
263.00	C*		ALL PROPERTY.		
264.00	C*		onx - process munch		
265.00	C*				
266.00	C*	processing.	1 modern street	nd function be	100
267.00	C.	processing:	 process standa process specia 	1 function key	ovite
268.00	C*		a. Process specia	- remeeton key	most bill o
269.00	CORR	SOORX	BECKS.		
271.00	C*	account.	and the second second		
272.00	C*				
273.00	C*	netain curren	t page of subfile.		
274.00	C*				
275.00	C		Z-ADD@26RCH	€ G77880	
276.00	C*	300033255	COD TAXABLE		
277.00	COR	TOOEXA	TAG		
278.00	C*				
279.00	C.	of your particular	ted, exit subroutin		
280.00	C.	II NOD Indian	ced, whit bubloutin		
281.00	CER	GRAID	CAREQUEREDJ	124D EXCH	LR
283.00	C.	100 A 10	Contraction of the second	EPHD DALE	
284.00	C*			100 A Processing (1997)	
285.00	C*	if pisplay we	ys pressed, exit to	halp facility	and return.
286.00	C*				
287.00	C*				
288.00	CER	GRAID	CALL 'P9601N'		8570
289.00	COR				98
290.00	C*		PARM	TOORC	
291.00	COR		PARM	IO0SC GEVEDG	
292.00	COR		PARM	IOUCER	
293.00	C*		2000	TO OCHE	
295.00	CER	SUAID	CABNESPREYS	TOOBLA	
296.00	C*				
297.00	COR		GOTO MNDESCE		
298.00	C*				
299.00	CORR		END		
300.00	C.	방법 방법 것 (1987-1997		224.25504.5	
301.00	C*		sitive welp pressed		
302.00	c.				
303.00	CER	BRAID	IPEQ #FOMEUC		
305.00	COR	100 A 11	MOVER *IN	44 IN	
306.00			CALL 'X96CCF'		90
307.00	C.				
308.00	COR		PARM	IOOSC	
309.00	COR		FARM	GEVEDG	
310.00	COR		PARM	IOUCER	
311.00	COR		PARM ' '	HICCFF 2	
312.00	C*				
313.00	CSR	**FLDB	IFNE *BLANKS		
314.00	CRR.		EXER GOOVL		
315.00			MACHINE ALLERY		
316.00	CORR		NOVER ##IN KND	*IN,1	
318.00	CORR		MOVEL*BLANKS	##DTAI	
319.00	CER		GOTO ENDERE	110.001	
320.00	C.				
321.00	COR		END		
322.00	C*				
323.00	C*	if pisplay er	rors pressed, exit	to error nessa	ges.
324.00	C*				
325.00	C*				
325.00 326.00 327.00	CSR CSR	BOAID	IPHO #FERRO Z-ADD1	4G	

Figure 25–13 User Index Server report (part 4)

327.01	CIPE	65	Z-ADD1	4 41
128.00	CAR	ŧG.	DOWLESS4	
329.00	CSR	BME, AG	IIED '1'	12222 222 22
\$30.00	CSE		NOVE ENK, #G	unn, 40
31.00	CER		ADD 1	4 61
332.00 333.00	CSR		ADD 1	łg
334.00	CSR		END	4 G
335.00	CSE		CALL 'PODOCE'	96
336.00	C*		CALL FOUCOR	20
337.00	CSR		PARM	OKE.
338.00	CSE		GOTO ENDERE	(201-201-1)
339.00	C*			
\$40.00	CSR		END	
341.00	C*			
342.00	C*	IT HELP key	pressed, exit to he	<pre>lp facility and return.</pre>
343.00	C.			
344.00	C*			
345.00	CSR	GGAID	CALL 'POOIELP'	
346.00	CSR			99
347.00	C*			
348.00	CSR		PARM	Hose
349.00	CSR		PARM	нваа
350.00	CSE		PARM	IOOEC
351.00	CSR		PARM	GRVFDG
352.00	CSR		PARM	IOOCER
353.00	CSR		GOTO ENDERE	
354.00	C.SR		END	
			AND	
356.00	C*	of some on he	y pressed, load nax	t more of mobile
357.00	C.	II ROLL OF KE	Freebed, road nax	c page of subtite.
359.00	C*			
359.00	CSR	BEAID	TREE ATENTS	
360.00	CSR	\$GEND	INE '1'	
362.00	CSR	ANTHO	NOVE ' '	VISELC 1
363.00	CSR		EXER GOO4	*Distance 1
364.00	C*		EAST SOUT	
365.00	CSE		ELCE	
366.00	CSE		Z-ADD\$SVI1	11
367.00	CSR		NOVE *BLANK	SPDLO1
368.00	CARE		NOVE *PLANK	STACO
369.00	CSR		NOVE *BLANK	
370.00	CSR		NOVE *BLASK	STRP01 STRP02
371.00	CSR		NOVE *BLASK	SINCU
372.00	CSR	11	ADD 1	#GPRHO
373.00	COR		DO SPGEZ	0.65501909
374.00	CFR		ADD 1	11
375.00	CAR		NOVER * IN	SHIN
376.00	CSR		WRITEVINDERS	
377.00	CSR		END	
378.00	CSE		Z-ADD11	\$SVI1
379.00	CSE		END	
380.00	CASE		GOTO ENDERE	
381.00	C*			
382.00	CSR		END	
383.00	C*			
384.00	C*	II NOLT DOMN	say pressed, reset	subfile page display.
385.00	C*			
386.00	C*		and America	
387.00	CGR	GEAID	INED #FROID	A
388.00	CSR		NOVE \$GVI1	#GPRBO
389.00	CSR C*		GOTO ENDERE	
390.00	C.SR		END	
	C'		LAD	
392.00	C.	of clear care	en pressed, clear s	creep and return
	C.			
394.00	C.			
395.00	CSR	BRAID	IPED #FCLR	
395.00	CSR	Saw 1D	EXER SOOL	
397.00	C.SR.		KKEN S001	
399.00	CAR		GOTO ENDERE	
400.00	C*		GOTO ENDERE	
401.00	CSR		END	
401.00	CSE	GAID	IPNE '1'	
404.00	CSR		GETON	0193
405.00	CSE		GOTO ENDERE	
405.00	Can.		Group and an and a second	
	CSR		END	
407.00		STREET REVER	ENDER	
407.00	CSE	EBECEXE	ENDER	

Figure 25–14 User Index Server report (part 5)

412.00	C.	SOBROUTINE SC	ovn - cursor contr	ol seturn value	6
414.00	C*				Constant of the second s
415.00	C*	av format fi	nd the field to un	t avon bns atsh	n the
416.00	C.	returned valu	nd the field to up e. if the format	is a subfile t	he record
417.00	C*	to channe is	found in manny.		
418.00	C*	an annula 10	and an another		
419.00	CFR	SOOAL	BECKER		
420.00	C*				
421.00	č.				
422.00	CER	##EVAL	INED ' "BLANK"		
423.00	OFE		NOVE *BLANK	##EVAL	
424.00	COR		END	filmine.	
425.00	C*				
426.00	C*	seturn values	for fields in for	nat VINDEXC	
427.00	C*	101 TO 100 TO 100		and the second	
428.00	CER	**EPMT	IPED 'VINDERC '		
429.00	C*				
430.00	COR	##FLDS	IPHO 'ACTION '		
431.00	CORR		NOVEL+FEVAL	ACTION	
432.00	CER		GOTO ENDOVL		
433.00	C*				
434.00	C*		END		
435.00	C*				
436.00	COR	##FLEM	IMEQ 'VDCO '		
437.00	CGR	274 BATCOS	MOVEL ##RVAL	ADGO	
438.00	CER		NOVEL##RDGC	WC0001	
439.00	CSE		GOTO ENDOVL	000000000000000000000000000000000000000	
440.00	C*				
441.00	COR		END		
442.00	CER		END		
443.00	C*				
444.00	C*	neturn values	for fields in for	nat visions	
445.00	C*				
446.00	CGR	**F.27MT	INSO 'VINDERS '		
447.00	CER	GREEN	ANDGTO		
448.00	C*				
449.00	CER		MOVEL ##IN	SHIN	
450.00	CGE	GEREN	CHAINVINDERS		81
451.00	CSR	* 1986 1.	IND .0.		
452.00	CSR		NOVERGHIN	*IN,1	
453.00	C*				
454.00	C.				
455.00	CER	##FLD8	ISSD . RENCO .		
456.00	CER		NOVEL+#RVAL	SINCO	
457.00	CER		GOTO TOOVLA		
458.00	C*				
459.00	CRE		END		
\$60.00	C*				
461.00	CER	++FLDB	ISED . SEDIOI .		
462.00	CSE		NOVEL+PRVAL	SFDLO1	
463.00	CSR		GOTO TOUVLA		
464.00	C.				
465.00	COR		END		
466.00	C*				
467.00	CER	++FLD8	INED 'SERFOI '		
468.00	CER		NOVEL##RVAL	SFRP01	
469.00	CER		GOTO TOOVIA		
	C*				
471.00	CER		END		
472.00	C*	11.000			
473.00	CSR	++FLD8	IBED . TREBOS .		
474.00	COR		MOVEL##RVAL	SFRP02	
475.00	CSR		GOTO TOOVLA		
476.00	C*				
477.00	COR	1000020	END		
478.00	CSR C*	TOOVLA	TAG		
479.00	-		GETTER		1440
480.00	CER			-	32
481.00	CSR		NOVER * IN OPERTVINDERS	SHIN	81
					01
483.00	CORR		END		
	CSR C*		AND		
485.00		achieves and the	for fields in for	and arrest	
486.00	C*	necurn values	for fields in for	INC VIBDENI	
487.00	C*	**EPMT	IPED 'VINDER1 '		
		** KCML			
489.00	CER.		END		
490.00		private states	ENDS		
491.00	CSR	ENDOVL			
492.00	C.				
	C.	SUBROUTINE SO			

Figure 25–15 User Index Server report (part 6)

	C*				
6.00	C.	processing:	1. meset all wide	o entropy and dat	a file fields
8.00	c.	processing:	for next trans	o screen and dat	a file fleids
	C*		2. clear action of	ode only if requ	ested.
0.00	C*				
1,00	CSE	\$001	DECER.		
2.00	C*				
3.00	CARE		NOVE *BLANK	\$1DLO1	
4.00	CARR		NOVE *RLASK	\$1EP01	
5.00	CSE		NOVE *BLANK	\$18902	
6.00	CAR		Z-ADD*IERO	##RCOL	
7.00	CSR		Z-ADD*IERO	**RROW	
8.00			Z-ADD*EERO	€GPRNO	
9.00	CSR		NOVE *BLANK NOVE *BLANK	SFDLO1	
1.00	CSR		MOVE *PLANE	SPNCO SFRPO1	
2.00	CORE		MOVE *PLANK	SFRP02	
3.00	CSR		NOVE *PLANK	SINCU	
	CSE		NOVE *BLANK	VDCO	
5.00	COR		NOVELEVL24N	VDL24	
	CASE		MOVE '0'	SHIN37	
	~			SPIRJ/	
.00	C*				
2.00	C*	clear action	code only if clear	screen action	
0.00	C.				
	OFF	BRAID	IPED #FCLR		
2.00	COR	ECC1935	IFED #FCLR NOVE "ALL'O"	SEESET	
3.00	CARE		NOVERSEET	*IN,41	
4.00	COR		NOVE	ACTION 1	
5.00	CSE		Z-ADDO0000	♦ GPRBO	
00.2	CORR		SETON	100000000000	31
7.00	COR		WRITEVINDESC		99
5.00	CAR		SETOF		203193
9.00	CSR		Z-ADDO	11	
D.00	CORR		DO \$PGSZ ADD 1		
1.00	CGSR		ADD 1	11	
2.00	CARE		MOVER * IN	SHIN	
3.00	CRS		WRITEVINDERS		81
4.00	CSE		END	120170224	
5.00	CSE		Z-ADD11	\$GVI1	
.00	COR		MOVE *BLANK	\$100	
.00	CSE		NOVE *BLANK	\$1MCO	
5.00	CSE		MOVE *BLANK	WC0001	
9.00	CARE		END		
0.00	C*				
	CSR	EBD001	ENDER		
1.00	Gaaaaa				
2.00			003 - mdit way		
2.00	C*				
2.00	C.				
2.00	C*	SUBROUTINE S			
.00	C*				
.00 .00 .00 .00 .00	C.		1. mitialize err	or arrays and su	
00 5.00 5.00 7.00 5.00			1. mitialize err	or arrays and su	
4.00 5.00 5.00 7.00 5.00 9.00	00000		1. mitialize err	or arrays and su	
5.00 5.00 7.00 5.00 5.00 5.00				or arrays and su	
4.00 5.00 5.00 7.00 5.00 9.00 9.00		processing:	1. mitialize ern 2. Load inquiry s 3. Load subfile i 3. Monitor for en	or arrays and su	
5.00 5.00 7.00 5.00 9.00 9.00 9.00			1. mitialize err	or arrays and su	
5.00 5.00 7.00 5.00 9.00 9.00 9.00		Frocessing:	 mitialize err Load inquiry s Load subfile i Monitor for er 	or arrays and su	
4.00 5.00 5.00 7.00 5.00 9.00 0.00 0.00		Processing:	1. Initialize err 2. Load inguiry s 3. Load subfile 3. Monitor for er EEGER	or arrays and su election. nformation. pty subfile.	
4.00 5.00 7.00 5.00 5.00 5.00 5.00 5.00 4.00 5.00		Processing:	 mitialize err Load inquiry s Load subfile i Monitor for er 	or arrays and su election. nformation. pty subfile.	
5.00 5.00 7.00 5.00 5.00 5.00 5.00 5.00	บบบบบบบบบบบบบบบบบบบบบบบบบบบบบบบบบบบบบบบ	Processing:	1. Initialize eri 2. Load inquiry s 3. Load subfile i 3. Monitor for er BEGER Indicators and array	or arrays and su election. nformation. pty subfile. w.	
4.00 5.00 5.00 5.00 5.00 0.00 0.00 2.00 3.00 4.00 5.00 7.00	C* C* C* C* C* C* C* C* C* C* C*	Processing:	1. Initialize erri 2. Load inquiry s 3. Load subfile 1 3. Monitor for er EEGER Indicators and array MOVE "ALL'O'	or arrays and su election. nformation. pty subfile. 9. \$REGET 39	
4.00 5.00 5.00 8.00 9.00 0.00 1.00 2.00 3.00 4.00 5.00 6.00 7.00		Processing:	1. Initialize and 2. Load inquiry s 3. Load subfile 1 3. Nomitor for an DESER Indicators and array NOVE "ALL'O" NOVE "ALL'O"	or arrays and su election. mformation. gty subfile. s. greet 39 greet 39 greet 39	
4.00 5.00 7.00 8.00 9.00 0.00 1.00 2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00	C. C. C. C. C. C. C. C. C. C. C. C. C. C	Processing:	1. Initialize eri 2. Load inquiry s 3. Load subfile 1 3. Nonitor for er PEGER Indicators and array NOVE "ALL'O' NOVE "ALLA"	or arrays and su election. nformation. gty subfile. 9. grasser 39 grass1 63 '18,41	
4.00 5.00 5.00 7.00 8.00 9.00 0.00 2.00 3.00 4.00 5.00 6.00 7.00 8.00 9.00	C* C* C* C* C* C* C* C* C* C* C* C* C* C	Processing:	1. Initialize and 2. Load inquiry s 3. Load subfile 1 3. Nomitor for an DESER Indicators and array NOVE "ALL'O" NOVE "ALL'O"	or arrays and su election. mformation. gty subfile. s. greet 39 greet 39 greet 39	bfile.
4.00 5.00 5.00 5.00 5.00 5.00 5.00 5.00	C* C* C* C* C* C* C* C* C* C* C* C* C* C	Processing:	1. Initialize arr 2. Load subfile 1 3. Load subfile 1 3. Nonitor for ar BEGER 	or arrays and su election. nformation. gty subfile. 9. grasser 39 grass1 63 '18,41	
4.00 5.00 5.00 5.00 5.00 5.00 5.00 5.00	C* C* C* C* C* C* C* C* C* C* C* C* C* C	processing: reset error :	1. Initialize arr 2. Load subfile 1 3. Load subfile 1 3. Nonitor for an DECER Indicators and array MOVE "ALL-O" MOVE "ALANK MOVESALENET NOVEAPREENT CLEARMER	or arrays and su election. nformation. gty subfile. W. ghtsen 39 ghtsen 63 *IN,41 gent,2	bfile. ClearData
		processing: Reset error : clear the us	1. Initialize err 2. Load subfile 1 3. Load subfile 1 3. Nonitor for ar mexcer. 	or arrays and su election. mformation. gty subfile. %. dmssmr 39 dmssr1 63 *IN,41 erkk,2 th; set flag.	Clear Data Structure
4.00 5.00 7.00 5.00 7.00 5.00 7.00 5.00 5		processing: Reset error : clear the us	1. Initialize err 2. Load subfile 1 3. Load subfile 1 3. Nonitor for ar mexcer. 	or arrays and su election. mformation. gty subfile. %. dmssmr 39 dmssr1 63 *IN,41 erkk,2 th; set flag.	Clear Data Structure containing record
4.00 5.00 7.00 8.00 9.00 9.00 9.00 9.00 9.00 9.00 9	C* C* C* C* C* C* C* C* C* C* C* C* C* C	processing: Reset error : clear the us	1. Initialize eri 2. Load subfile 1 3. Nonitor for er BEGER Indicators and array MOVE "ALL'O" MOVE "ALL'O" MOVE "ALLA" MOVESAPHERET CLEARMANTON	or arrays and su election. nformation. pty subfile. * * * * * * * * * * * * * * * * * * *	Clear Data Structure
4.00 5.00 7.00 5.00 5.00 5.00 2.00 2.00 2.00 5.00 5		processing: Reset error : clear the us	1. Initialize err 2. Load subfile 1 3. Load subfile 1 3. Nonitor for ar mexcer. 	or arrays and su election. mformation. gty subfile. %. dmssmr 39 dmssr1 63 *IN,41 erkk,2 th; set flag.	Clear Data Structure containing record format for User
4.00 5.00 7.00 8.00 0.00 1.00 3.00 4.00 5.00 6.00 7.00 9.00 0.00 2.00 2.00 2.00 2.00 3.00 5.00 5.00 5.00 5.00 5.00 5.00	C* C	processing: Reset error : 	1. Initialize eri 2. Load subfile 1 3. Nonitor for er BEGER Indicators and array MOVE "ALL'O" MOVE "ALL'O" MOVE "ALLA" MOVES "ALLARK MOVESAPHEMET CLEARMENET CLEARENET MOVESAPHEMET	or arrays and su election. nformation. gty subfile. s. dmmsnr 39 dmmsr1 63 "IR.41 werk.2 th; set flag. dsTART 1	Clear Data Structure containing record
4.00 5.00 7.00 9.00 9.00 9.00 9.00 9.00 9.00 9		processing: Reset error : 	1. Initialize eri 2. Load subfile 1 3. Nonitor for er BEGER Indicators and array MOVE "ALL'O" MOVE "ALL'O" MOVE "ALLA" MOVESAPHERET CLEARMANTON	or arrays and su election. nformation. gty subfile. s. dmmsnr 39 dmmsr1 63 "IR.41 werk.2 th; set flag. dsTART 1	Clear Data Structure containing record format for User
4.00 5.00 7.00 9.00 9.00 9.00 9.00 9.00 9.00 9	00000000000000000000000000000000000000	processing: Reset error : 	1. Initialise err 2. Load subfile 1 3. Load subfile 1 3. Nonitor for ar BECER 	or arrays and su election. nformation. gty subfile. *. \$REEDT 39 \$REETI 63 *IN,41 eMMK,2 th; set flag. \$START 1 gany	Clear Data Structure containing record format for User
4.00 5.00 5.00 7.00 9.00 9.00 1.00 1.00 4.00 5.00 5.00 5.00 9.00 1.00 2.00 1.00 2.00 5.00 5.00 5.00 5.00 5.00 5.00 5	00000000000000000000000000000000000000	processing: Reset error : 	1. Initialize eri 2. Load subfile 1 3. Nonitor for er BEGER Indicators and array MOVE "ALL'O" MOVE "ALL'O" MOVE "ALLA" MOVES "ALLARK MOVESAPHEMET CLEARMENET CLEARENET MOVESAPHEMET	or arrays and su election. nformation. gty subfile. s. dmmsnr 39 dmmsr1 63 "IR.41 werk.2 th; set flag. dsTART 1	Clear Data Structure containing record format for User
4.00 5.00 5.00 7.00 9.00 9.00 1.00 2.00 4.00 5.00 4.00 5.00 7.00 8.00 9.00 1.00 2.00 4.00 5.00 7.00 8.00 7.00 5.00 1.00 5.00 0.00 1.00 5.00 0.00 1.00 0.00 1.00 0.00 0		processing: Reset error : 	1. Initialize err 2. Load inquiry e 3. Load subfile 1 3. Monitor for er EEGER 	or arrays and su election. nformation. gty subfile. *. \$REEDT 39 \$REETI 63 *IN,41 eMMK,2 th; set flag. \$START 1 gany	Clear Data Structure containing record format for User
1.00 2.00 2.00 4.00 5.00 5.00 5.00 5.00 7.00 4.00 1.00 4.00 4.00 5.00 4.00 5.00 4.00 5.00 4.00 5.00 4.00 5.00 5	0.000000000000000000000000000000000000	processing: Reset error : 	1. Initialize err 2. Load inquiry e 3. Load subfile 1 3. Monitor for er EEGER 	or arrays and su election. nformation. gty subfile. 9. grasser 39 grasser 30 grasser 30	Clear Data Structure containing record format for User
4.00 5.00 7.00 7.00 9.00 9.00 2.00 2.00 4.00 5.00 5.00 5.00 5.00 5.00 5.00 5		processing: Reset error : 	1. Initialize err 2. Load subfile i 3. Load subfile i 3. Load subfile i 3. Monitor for er EEGER Indicators and array MOVE *ALL'O' MOVE *G' CLEARMENT MOVE 'Y' MOVE 'Y' MOVE Y' MOVE Y'	or arrays and su election. nformation. gty subfile. s. drscer 39 drscr1 63 *1H,41 werk,2 th; set flag. dsTART 1 gany werm dws5 50	Clear Data Structure containing record format for User
4.00 5.00 5.00 7.00 2.00 2.00 2.00 2.00 2.00 2.00 2	00000000000000000000000000000000000000	processing: Reset error : 	1. Initialize eri 2. Load inquiry e 3. Load subfile 1 3. Monitor for er BEGER Indicators and array MOVE *ALL'O' MOVE *ALL'O' MOVE *ALLEN MOVESAPRESET CLEANDATCO Index for CLEANDATCO EXER COLL MOVEAPROCO EXER COLL 	or arrays and su election. nformation. gty subfile. 9. grasser 39 grasser 30 grasser 30	Clear Data Structure containing record format for User

Figure 25–16 User Index Server report (part 7)

578.00	C.	netermine if	any entries exist for	that com	VIIC		
580.00	C*	Lacar mine it	any encires encor ion		and .		
			-		1000		
581.00	CGR		Z-ADD\$1KEY2	PEREYL	Load	key lengt	h record
582.00	CRE		Z-ADD\$18ECL	PERECL			with values
583.00	CER		MOVELDSIDE1	PERY	ac ing i	a, and key	whill values
584.00	C*			8			
585.00	CER		CALL 'XOUIDX'				
585.00	C.*		areas according				
						and a start	
587.00	CER		PARM	\$1100		ane 11b	
585.00	CGR		PARM 'I'	PEACTN		n code	Call to User
589.00	CZE		PARM ' BQ'	PERULE	actic	n mule	Call to User
590.00	CORE		DARM	PERSYL			Index to inqui
					Ney 1	ength	
591.00	CIFR		PARM	PERT		ields	on an existing
592.00	CER		PARM	PERSCL	Entry	Length	
593.00	CORE		PARM	PERSO	Entry		record
594.00	CRE		PARM	PESTE	WT TOT	status	
			Prosta -	10010		THE R. W. LEWIS	
595.00	C	2012-012-012-04-04-02-012-01-01-01-01-01-01-01-01-01-01-01-01-01-	n an	annon uno			
595.00	C*	Brror of tryl	ng to delete but not	round.			
597.00	C*	62	-				
595.00		Burning of	1998 161		BOT F	and and	
	CER	PESTE	IPNE 'O'		DFUL F	CARLES	
599.00	CER	*IN23	COND '1'		41 *EE	on a	
600.00	CGR		END				
601.00	C*					100	64677678 8 787877
\$02.00	C*	of indicator	41 on, invalid key fo	r action o	oho	Check	error status
		ii indicator	at on, meaning tay it	a accion o	and the		eter to see if
\$03.00	C*						
604.00	CER	*1841	1480 .1.			arecor	d was found
\$05.00	CER		NOVE'1'	BMK, 2			0.000000000000000
\$05.00	CER		SETON		23		
					8.2		
\$07.00	CER		END				
\$05.80	C*						
609.00	C*	if indicator	ss on, record in use.				
\$10.00	C*						
\$11.00	COR	*1899	1580 .J.				
612.00	COR		NOVE '1'	GMK, 6			
613.00	CIPE		GETON		4193		
					4133		
614.00	CGR		END				
615.00	C*						
616.00	C*	of not incuir	v, skip remainder of	subrout inc	s		
617.00	C*	in meetinguit	2, map remainder or				
618.00	CER	*1824	CAREQ'O'	ENDOOS			
619.00	C*						
620.00	C*						
	C.	and second second	to mentadan at aske	and a second			
621.00		II ariors, sk	ip remainder of subro	ucina.			
622.00	C*						
623.00	COR	*1893	CAREQ'1'	ENDOOS			
624.00	C*						
			The second se				
625.00	C*	2. 이번 관람 모습한 것이 가지?					
\$25.00	C*	initialize su	bfile indexes.				
627.00	C*						
628.00	CIFE		Z-ADDO	11	50		
629.00	CGR		Z-ADDO	\$GVI1	50		
\$30.00	CRE		Z-ADDO	\$GPR100			
531.00	CORE		NOVE 'O'	BGEND	1		
32.00	C*			An THE			
		and added a 2 feet	and the strend one				
\$33.00	C*	Reinicialize	subfile display				
634.00	C*						
00.262	OFF		GETCH		31		
\$35.00	COR		WRITEVINDERC		99		
\$37.00	CER		SETOF		31		
\$38.00	C*						
539.00	C*	Load subfile	records.				
		Story Presente					
640.00	C*						
641.00	CGR		EASE SO04				
\$42.00	C*						
643.00	C*			24 State 12 St		N. 68.2 Miles	32725
\$44.00	CER	11	IFLT \$PGSZ	1000			
45.00	CER	\$PGSE	GUD I1	+G			
\$45.00	C*						
\$47.00	CER		NOVE * BLASK	SFDLO1			
\$48.00	COR		NOVE * BLANK	SINCO			
\$49.00	CIPE		NOVE * BLANK	SFRPOI			
\$50.00	CEE		NOVE * BLANK	SFEPO2			
651.00	CER		NOVE *BLANK	SUNCO			
				saarco			
652.00	CIFE		DO #G				
653.00	CORR		DO #G ADD 1	11			
654.00	CER		NOVER * IN	SHIN			
				20110			
655.00	CIFE		WEITEVINDERS				
656.00	CORE		END				
	CER		Z-ADDI1	\$GVI1			
				DOLATT.			
			END				
655.00	CIFR						
657.00 655.00 659.00	COR	EBID 003	ENDER				

Figure 25–17 User Index Server report (part 8)

61.00	Contract	**************		***************************************
	C*			
62.00		copy connon	subroutine - might	Justify Muneric Fields
63.00	C*			
64.00	C/COPS	JDECPY, CO012		
65.00		**************	*******************	
65.00	C*			
67.00	C.	SOBROOTINE S	004 - Load video so	reen bata
65.00	C.			
69.00	C*			
70.00	C*	processing:	1. Move data base	information to video screen.
71.00	C*	_		n fields are alpha and
72.00	C*			ic information must be
73.00	C*		processed throu	gh subroutine cool4 to set
74.00	C*		proper decimals	and provide editing for en.
75.00	C.		display on scre	en.
75.00	C*			
77.00	C*			t be converted from their
75.00	C.			of month, day and year or
79.00	C*			ysten format using program
50.80	C*		20028.	
51.00	C*		Contraction and Contraction of Contr	
52.00	CORR	\$004	DECEN	
83.00 84.00	C*			
		sound dates ga-	14 diations are	store inter attain
85.00 85.00	C*	Load data fie	in discionary param	eters (one cycle only).
55.00	CER	\$998	CAREO! "	6998
85.00	C*	4.4.4.4	Chang.	
59.00			END	
90.00	C*			
91.00		rf muhfila lo	ad completed, skip	mbroutine
92.00	C*		an contracta, such	
93.00	COR	SGEND	1982 '1'	
94.00	CORR		Z-ADDO	#GPR80
95.00	CER		GOTO ERIDOO4	
95.00	COR		END	
97.00				
	C*			
	C*			
5.00	C*		number for comparis	
95.00 99.00	C* C*	save company		on later.
99.00 99.00 00.00		save company	number for comparis	on later.
95.00 99.00 00.00 01.00 02.00	C* C* C*	save company	number for comparis	on later.
05.00 09.00 01.00 02.00 03.00	C* C* C* C* C*	save company	number for comparis	on later.
00.00 00.00 01.00 02.00 03.00 04.00	C* C* C* C* C*	save company	number for comparis	on later. ====================================
85.00 99.00 00.00 01.00 02.00 03.00 04.00 05.00	C* C* C* C* C*	save company	number for comparis	on later. ====================================
45.00 99.00 00.00 01.00 02.00 03.00 04.00 05.00	C* C* C* C* C* C* C*	save company	number for comparis Nove \$100 t - company descrip	on later. ========= \$\$\$00 5 tion.
98.80 99.80 30.80 31.80 32.80 35.80 34.80 35.80 35.80 35.80		save company	number for comparis NOVE \$100 t - company descrip NOVE *BLANKS	on latar. ========= \$\$\$00 5
85.00 95.00 10		save company	NUMBER for comparis NOVE \$100 t - company descrip NOVE *BLANKS NOVE *BLANKS	on later. ========= \$\$00 5 tion. PG&0 K700
85.00 99.00 00.00 01.00 02.00 05.00 05.00 05.00 05.00 11.02 11.03	C* C* C* C* C* C* C* C* C* C* C* C* C* C	save company	NUMBER for comparis NOVE \$100 t - company descrip NOVE *BLANKS NOVEL\$100 CALL *120010'	on latar. ========= \$\$\$00 5
95.00 99.00 00.00 02.00 02.00 04.00 05.00 05.00 05.00 05.00 11.02 11.03 11.04 11.05		save company	NUMBER for comparis NOVE \$100 t - company descrip NOVE *BLANKS NOVE*BLANKS CALL *150010*	on later. ********* \$\$00 5 tion. P000 KTW0 81
95.00 99.00 00.00 01.00 02.00 03.00 04.00 05.00 05.00 11.02 11.03 11.04 11.05 11.05		save company	NUMBER for comparis NOVE \$100 t - company descrip NOVE *BLARKS NOVE *BLARKS NOVE *CO CALL *250010' DAIN	on later. \$\$000 5 tion. pose KY809 81 Pose
85.00 99.00 00.00 01.00 02.00 03.00 04.00 05.00 05.00 05.00 11.02 11.03 11.04 11.05 11.05 11.07		save company	NUMBER for comparis NOVE \$100 t - company descrip NOVE *BLANKS NOVE*BLANKS CALL *150010*	on later. ********* \$\$00 5 tion. P000 KTW0 81
85.00 99.00 00.00 01.00 02.00 05.00 05.00 05.00 05.00 11.02 11.03 11.04 11.05 11.05 11.05		save company	NUMBER for comparis NOVE \$100 t - company descrip NOVE *BLARDS HOVEL\$100 CALL *ISOOIO' DAIM PARM	on later. second 5 tion. Prese KYWE B1 Prese DE0010
AS.00 PS		sava company	NUMBER for comparis NOVE \$100 t - company descrip NOVEL\$100 CALL *120010* CALL *120010* DAIN DAIN NOVELOCHAME	on later. ************************************
8.00 9.00 0.00 1.00 2.00 3.00 5.00 5.00 5.00 1.02 1.01 1.04 1.05		sava company	NUMBER for comparis NOVE \$100 t - company descrip NOVEL\$100 CALL *120010* CALL *120010* DAIN DAIN NOVELOCHAME	on later. second 5 tion. Prese KYWE B1 Prese DE0010
88.00 99.00 00.00 01.00 02.00 04.00 05.00 04.00 05.00 04.00 05.00 04.00 05.00 04.00 05.00 04.00 05.00 00		sava company	NUMBER for comparis NOVE \$100 t - company descrip NOVE \$1ANKS NOVEL\$100 CALL '150010' DAIM DAIM NOVELOCHAME	on later. ************************************
28.00 39.00 30.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 23.00 25		sava company	NUMBER for comparis NOVE \$100 t - company descrip NOVEL\$100 CALL *120010* CALL *120010* DAIN DAIN NOVELOCHAME	on later. ************************************
98.00 99.00 00.00 01.00 02.00 04.00 05.00 04.00 05.00 11.02 11.03 11.04 11.05 11.04 11.05 11.04 11.05 1.		sava company	NUMBER for comparis NOVE \$100 t - company descrip NOVE *SLARKS NOVEL\$100 CALL *120010' DARM PARM NOVELOCRAME bfile page control	on later. ************************************
25.00 29.00 20.00 22.00 23.00 23.00 23.00 24.00 25		sava company	NUMBER for comparis NOVE \$100 t - company descrip NOVE *BLANKE NOVE *BLANKE CALL *ESOBIO CALL *ESOBIO CALL *ESOBIO CALL *ESOBIO CALL *ESOBIO DATM PARM NOVELCCHAME bfile page control Z-ADDO	on later. ************************************
85.00 99.00 19.00 10		sava company	NUMBER for comparis NOVE \$100 t - company descrip NOVE *ELARDS CALL *ISOOIO' DAIM DAIM DAIM NOVELOCHAME bfile page control Z-ADDO Z-ADDO	on later. second 5 tion. Prese Kree B1 Prese Decolo VC0001 and index. \$PS 30 *Frino
AS.00 99.00 10.00 11.00 12.00 13.00 13.00 13.00 13.00 14.00 15.00 11.01 11.04 11.03 11.04 11.05 1.		sava company	NUMBER for comparis NOVE \$100 t - company descrip NOVE *BLANES NOVE *BLANES CALL *250010' CALL *250010' CALL *250010' DARM PARM NOVELOCHAME bfile page control Z-ADDO Z-ADDO Z-ADDOSYUI	on later. ************************************
85.00 99.00 10.00 11.00 12.00 13.00 13.00 13.00 13.00 13.00 13.00 13.00 13.00 14.00 15.00 11.02 11.03 11.05 15.00 15	C* C* C* C* C* C* C* C* C* C* C* C* C* C	sava company	NUMBER for comparis NOVE \$100 t - company descrip NOVE *BLANES NOVE *BLANES CALL *250010' CALL *250010' CALL *250010' DARM PARM NOVELOCHAME bfile page control Z-ADDO Z-ADDO Z-ADDOSYUI	on later. second 5 tion. Prese Kree B1 Prese Decolo VC0001 and index. \$PS 30 *Frino
85.00 99.00 90		sava company 	NUMBER for comparis NOVE \$100 t - company descrip NOVE *BLANKS MOVE *BLANKS CALL *ISO010* CALL *ISO010* CALL *ISO010* DATM PARM NOVELOCHAME bfile page control Z-ADDO Z-ADDO Z-ADDO	on later. ************************************
85.00 95		sava company 	NUMBER for comparis NOVE \$100 t - company descrip NOVE *BLANES NOVE *BLANES CALL *250010' CALL *250010' CALL *250010' DARM PARM NOVELOCHAME bfile page control Z-ADDO Z-ADDO Z-ADDOSYUI	on later. ************************************
85.00 99		sava company 	NUMBER for comparis NOVE \$100 t - company descrip NOVE *BLANKS MOVE *BLANKS CALL *ISO010* CALL *ISO010* CALL *ISO010* DATM PARM NOVELOCHAME bfile page control Z-ADDO Z-ADDO Z-ADDO	on later. ************************************
25.00 29.00 20		sava company move to outpu nnitialize su nead user ind	NUMBER for comparis NOVE \$100 t - company descrip NOVE *LANKS CALL *ISOOIO' CALL *ISOOIO' CALL *ISOOIO' CALL *ISOOIO' DANM NOVELOCHAME bfile page control Z-ADDO Z-ADDO Z-ADDO Z-ADDO Z-ADDO Z-ADDO	on later. ************************************
25.00 25.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 22.00 21.03 11.03 11.04 11.05 11.05 11.05 11.05 11.05 11.05 11.05 11.05 11.05 11.05 11.05 11.05 12.00 15.00 22.00 20		save company move to outpu nitialize su nead user ind *1396	NUMBER for comparis NOVE \$100 t - company descrip NOVE \$120 CALL 'ISO010' CALL 'ISO010' PARM PARM NOVELOCHAME bfile page control S-ADDO Z-ADDO Z-ADDO Z-ADDO SETOF DOWEQ'0'	non later. second 5 tion. Pese NYEE Pese Decolo vecool and index. \$ps 30 \$ernao 11 file page filled. 56
25.00 29.00 20		save company move to outpu nitialize su nead user ind *1396	NUMBER for comparis NOVE \$100 t - company descrip NOVE \$120 CALL 'ISO010' CALL 'ISO010' PARM PARM NOVELOCHAME bfile page control S-ADDO Z-ADDO Z-ADDO Z-ADDO SETOF DOWEQ'0'	non later. second 5 tion. Pese NYEE Pese Decolo vecool and index. \$ps 30 \$ernao 11 file page filled. 56
25.00 29.00 00.00 02.00 02.00 02.00 05.00 05.00 05.00 05.00 11.02 11.03 11.04 11.05 11.04 11.05 12.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 22.00 20		nead user ind "mose to outpu	NUMBER for comparis NOVE \$100 t - company descrip NOVE *BLANKE NOVEL\$200 CALL *ISO010' PANM PANM NOVELCCNAME bfile page control S-ADD0 Z	on later. ************************************
25.00 25.00 20		save company move to outpu noitialize su nead user ind "INSO First time th	NUMBER for comparis NOVE \$100 t - company descrip NOVE *BLANKE NOVE *BLANKE NOVE *COMPARE CALL *250010' -PARM PARM NOVELCCHAME bfile page control Z-ADDO Z	on later. ************************************
y 30		save company move to outpu noitialize su nead user ind "INSO First time th	NUMBER for comparis NOVE \$100 t - company descrip NOVE *BLANKE NOVE *BLANKE NOVE *COMPARE CALL *250010' -PARM PARM NOVELCCHAME bfile page control Z-ADDO Z	on later. ************************************
25.00 29.00 00.00 01.00 02.00 05.00 05.00 05.00 05.00 11.02 11.03 11.04 11.04 11.05 12.00 1.		sava company move to outpu rnitialize su nead user ind *1296 First time th the index log	NUMBER for comparis NOVE \$100 t - company descrip NOVE *BLANKE NOVE *BLANKE CALL *ISO010' CALL *ISO010' CALL *ISO010' CALL *ISO010' CALL *ASO00 CALL *ASO10' CALL *ASO10' CALL *ASO10' CALL *ISO10' CALL *ISO10' CALD *ISO10' CA	on later. ************************************
25.00 29.00 20		save company move to outpu noitialize su nead user ind "INSO First time th	NUMBER for comparis NOVE \$100 t - company descrip NOVE *BLANKE NOVE *BLANKE CALL *ISO010' CALL *ISO010' CALL *ISO010' CALL *ISO010' CALL *ASO00 CALL *ASO10' CALL *ASO10' CALL *ASO10' CALL *ISO10' CALL *ISO10' CALD *ISO10' CA	on later. ************************************

Figure 25–18 User Index Server report (part 9)

733.00	C*			
734.00	C* SUCCE	ssive times through, read	1 next "greater"	entry.
735.00	C*			
736.00	C*		1000000000	
737.00	CER	Z-ADD\$1KEYL	PERETL	Load key length, record
738.00	CER	Z-ADD\$1RECL NOVELOSIDE1	PERSCL -	length, and key with values
739.00	CSR.	MOVELOSIDEL	PERT	and and any could be deter
741.00	CER	CALL 'XOOIDX'		
742.00	C*	CHEL ACOLDA		
743.00		PARM	\$1108	index Name
744.00	CER Call to Use	PARM 'I'	PEACTH 1	action code
745.00	can Index to	PARM 'GT'	PERULE	action mule
746.00	CER retrieve ner	PARM	PERETL	key Length
747.00	COR record that	PARM	PEKY	may rields
745.00	COR greater that	PARM	PERSCL	Entry Length
749.00			PERSC	nntrý nrror status
751.00	can current key	PARM	PESTE	REFOR STACUS
752.00	csr value	END		SSTART
753.00	C*	100		
754.00	C*	if status is 'o' then ass	une not found.	
755.00	C* :			
756.00	C*			
757.00	CGR	SETOF		96
755.00		PERTS CONP '0'		96 18 GI '0'
759.00	C*		S	
760.00	C*	setrieve entry to load da	ca structure.	Check error status
761.00	C*			The second s
762.00	COR	MOVELPSEEC	DETER1	parameter to see if a
764.00	C*			record was found.
765.00	C* 1	compare new company to in	quiry : if chang	ed, end.
765.00	C* :			
767.00	C*			
768.00		100 IFNE \$\$00		
769.00	CSR	SETO8		96
770.00	COR	END		
771.00	c* At en	d of index, set subfile o	maniation firs -	and mot bigh
772.00	C* AC en	ity attribute on last sub	offile record	na sec nign
774.00	C* Incens	rel rectionce ou tabe per	and readed.	
775.00		1896 IMBS '1'		
776.00	CGR	NOVE '1'	\$GEND	
777.00	CER	NOVE · ·	@IN37	1
778.00	COR	GOTO ENDOO4		
779.00	C*			
780.00	CSR	END		
781.00	C	•••••••••••		
782.00		record selection flag (s	Contract Viceo Contractor	
785.00	C* Repet	record perection riag (s	(mail).	
785.00	CER	NOVE '1'	\$GEL	1
785.00				
787.00	C*			
785.00	c* updat	e subfile for selected re	acords.	
789.00	C*			
790.00	CER	GEL IFEQ '1'		
791.00				
792.00	C* MOTA	to output . research time		
793.00	C* Nova	to output - pescription of	64 ·	
795.00	CER	NOVEL\$1DL01	SFDLO1	
796.00	Contraction			
797.00	Č*			
795.00	C* MOVA	to output - cost center		
799.00	C*			
800.00	COR	NOVE * BLANK	#GINDE	
801.00	CER	MOVEL\$1MCO	*GINDE	
802.00	CER	NOVE TWNCO	#DTYP	
803.00	CSR	NOVE MANCO	\$EWED	
804.00	CSR	NOVE BUNCO	4 BC	
805.00	COR	NOVE FUNCO NOVE GUNCO	#DSPD	
805.00	CER	NOVE GANCO	*ALE	
807.00	CER	NOVE JUNCO	*ALR *BCOR	
809.00	COR	NOVE · ·	4DC08	
810.00	CER	KRSE COOl61	The second s	
811.00	C*	and could		
812.00		ALR IFEQ 'L'		
813.00	CORR	NOVELASINGE	STNCO	
814.00	COR	ELSE		
815.00	COR	NOVE GINER	GENCO	

Figure 25–19 User Index Server report (part 10)

16.00	CER		END	
17.00		**********		···· ··· ··· · · · · · · · · · · · · ·
15.00	C*	Participation and Participation	and the second second	the second s
19.00	C*	Move to output	t - category code	- cost center oi
20.80	C*			
21.00	CER		NOVE *BLANK NOVELSINFOI	#GINDE #GINDE
22.00	CER		NOVE THEPOI	+OTYP
24.00	CER		NOVE WEEPOI	#EWED
25.00	COR		NOVE EMEPOI	#BC
25.00	CER		NOVE FERPOI	#DSPD
27.00	CER		NOVE GREPOI	#DATD
25.00	CER		NOVE JURPOI	ALE
29.00	CER		NOVE ' '	#800K
30.00	OFE		NOVE ' '	40008
31.00	CORE		EXER COOL61	
32.00	C*			
33.00	CER	#ALE.	INED 'L'	
34.00	CER		NOVELASINGE	SFRPO1
35.00	CER		ELCE	
36.00	CER		NOVE GEINER	SFRPO1
37.00	CORR		END	
35.00		*******		·····
39.00	C.			
40.00	C*	Move to output	t - category code	- cost center 02
41.00	C*		12.5 S. 5 S. 2 S. 3 S. 1 S. 1	
42.00	COR		NOVE *BLANK	*GINDR
43.00	CER		NOVEL\$18P02	4GINDE
44.00	CER		NOVE TREPO2	#OTYP
45.00	CER		NOVE WEEPO2	+EXED
45.00	CER		NOVE EMEPO2	*BC
47.00	CER		NOVE FUEPO2	10SPD
45.00	CER		NOVE GREPO2 NOVE JREPO1	#DATD #ALE
	CER		NOVE JURPOI	*ALR *BCOK
50.00			NOVE	
	CER			\$0008
52.00	C'		EXER CO0161	
54.00	CER	#ALE	INED 'L'	
55.00	CER	*ALE	NOVELASINGE	SFRP02
56.00	CER		RECE	STRF02
57.00	CER		NOVE OGINER	SFEPO2
55.00	COR		KND	SPRECZ
59.00				
60.80	C*			
61.00	C*	Move to output	- cost center	
52.00	C*	Here co ouche.	- core concer	
63.00	COR		NOVE *BLANK	#GINDR
64.00	CORE		NOVELSINCU	ACTNON
65.00	COR		NOVE THNCO	OTYP
65.00	OFF		NOVE WINCO	#EWED
67.00	CER		NOVE EMNCO	45C
68.00	CER		NOVE FUNCU	+DSPD
69.00	CER		NOVE GANCO	DATD
70.00	CER		NOVE JUNCU	#ALR.
71.00	CER		NOVE · ·	\$500R
72.00	CER		NOVE · ·	40008
73.00	CORR		EXSE CO0161	
74.00	C*			
75.00	CER	#ALR.	INED 'L'	
76.00	COR	2012/02/22	NOVELASINGE	GUNCO
77.00	CSR		ELSE	
78.00	OFF		NOVE GINER	GIANCO
79.00	CER		END	
80.80	C			·····
\$1.00		*************		·····
82.00	C*			
\$3.80	C.	increment sub	file page control	and index.
54.00	C*		-	
85.00	COR		ADD 1 ADD 1	\$PG
85.00	CER		ADD 1	II.
57.00	C.	2010/02/02/2010/03		
55.00	C*	if subfile page	se display not set	, set subfile page display.
59.00	C*			
90.00	COR	#GFRNO	IFED O	7110320310
91.00	CGR		Z-ADDI1	# ⊈28830
92.00	CER		END	
93.00	C*	2010/02/2017 02:04 04:04:04		
94.00	C.	write subfile	record and save c	urrent subfile index.
95.00	C*			
	CER		NOVEA * IN	GHIN
95.00	CORR		WRITEVINDERS	99

Figure 25–20 User Index Server report (part 11)

595.00	CIFR		Z-ADDI1	\$GVI1		
00.00	C.	of subfile as	ge loaded, drop ou	t of subments	ma	
200.00	c.	ii subille pa	ge roaded, drop of	e or subroues	and a	
02.00	CER	\$PG	CAREQ\$PGGZ	2210004		
003.00	C*					
004.00	COR		END			
05.00	CER		END			
05.00	COR	230004	KNDER			
05.00						
00.00	C*					
10.00	C*	copy connon s	ubroutine - Format	sumeric riel	ds f	or output with overright
11.00	C*					
13.00		PY JDECPY, COOl61				
14.00	C.+					
15.00	C*	SUBROUTINE SC	os - validate and	update input	data	0
16.00	C*					
17.00	C*			different dimension		
18.00	C*	processing:	 validate all v 			
20.00	C.		must be proces cools to be co	nverted to in	tarn	al numeric
21.00	Č*		representation	(15 digits o	dec:	inals).
22.00	C*		pate fields mu	st be convert	ed f:	ron system
23.00	C.		format to thei	r internal fo	inat.	of month,
24.00	C.		day and year o	r julian usin	g pr	ogran xooza.
25.00	C.		 update data fi subfile transa 	elds from imp	ut a	id process
27.00	C*		publice cranos	ccron.		
25.00	CRE	£005	DEGGR			
29.00	C*					
00.00	C*			전 이번 방가 이것이		
31.00	C.	if not additi	on or change, bypa	ss subrouting	a	
32.00	CER	*1921	IPEO 'O'			
34.00	COR	*1822	ANDEQ' 0'			
35.00	COR	N	GOTO ENDOOS			
936.00	C.					
37.00	CGR		END			
00.85	C.	process oll s	ubfile transaction	e C		
40.00	C*	FICCEDS HIT S	dbille clamatcion			
41.00	CER		NOVE	OWNE	1	
42.00	COR		Z-ADD1	\$\$IX	70	
43.00	CGR	5. 80.000 and 50	SETOF			9699
44.00	CER	*1896	DOMEO. 0.			
46.00	COR	\$\$IX	ANDLESSVII			
47.00	COR		NOVERSEET	*IN,41		
45.00	CER	\$\$IX	CHAINVINDERS			9699
49.00	CIFR		ILEO .O.			
80.00 81.00	CSR.	*1899	ANDEQ' 0'			
52.00	C*	read wideo in	put field for - co	et contor		
53.00	C*	1000 11000 11	bor mana non - co	ac concer		
54.00	COR		NOVERGRACO	GFI		
00.255	CER		ERSE CO042			
00.385	C*		NOVE +RADJ			
87.00 85.00	CSR.		NOVE WIRES	\$1NCO		
59.00	C.	peternine if	prior record exist	ed in uper in	dex.	
60.00	C.					
61.00	C*					
62.00	CER		Z-ADD\$1KEYL	PEREYL.		
63.00	COR		Z-ADD\$1RECL	PERECL		
64.00	CER.	Loading of	MOVELDSIDE1	PERA		
66.00	CFR	parameters	CALL 'XOOIDX'			
67.00	10.0					1000000000000
65.00	CER		PARM	\$1100		rdx same/rib
00.08	CGR	over muex to	PARM '1'	PEACTH		Action code
70.00	COR	see if a record	PARM 'BQ'	PERULE PEREYL		Action Hule Key Length
71.00	COR	exists	PARM	PERTL		Key rields
73.00	CIFR		FARM	PURBCL		Entry Length
74.00	CER		PARM	PERSO		Entry
75.00	CORR		PARM	PESTE		mrror status
76.00	C*		d and on proceed and	stad dalaks	014	nonond
77.00	C*	II DO GALA AD	d prior record exi	sced, delece	010	record.
	2 Mail 7 2 1					

Figure 25–21 User Index Server report (part 12)

00.08	CAR	PECTE	IND '0'	Check error sta	
\$1.00	CSR	SPHCU	ANDEQ *BLANK	to see if record	has found
2.00	C.SR				
3.00	C.SR.	Deletion of	CALL 'XOOIDE'		
4.00	CSR.	record from -	PARM	\$1100	rdx ware/L1
5.00	CAR		FARM 'D'	PSACTH	Action
7.00	CSR	User Index	PARM ' BQ'	PERULE	Action mule
5.00	CSE		PARM	PSKEYL	Key Length
9.00	CARE		PARM	PSEX	Key Length Key Fields
0.00	CSR		FARM	PSEBCL	<pre>kntry Lengt kntry</pre>
1.00	CSR		PARM	PAREC	Entry
2.00	CSR		PARM	PSSTS	mrror statu
3.00	C.SR		END		
4.00	C.SR.		END		
5.00	C*	process only 1	on-blank records		
7.00	C*	received since i	en ernin recorde		
5.00	CAR	STHEU	ITNE *BLANK		
9.00	C*				
0.00	C*				
1.00	C.				
2.00	C.	scrub and edit .	Description of		
03.00	C.F.R.		NOVELGEDLOI	\$1DLO1	
4.00	CSR C*		HOVELS FDLO1	\$10001	
5.00	C.	sdit allo	wed values - peso	ription of	
7.00	C*	Dure at 10	and terres - pape	a sperce or	
00.80	CER	AMDL01	IND '*ND'		
9.00	COR	\$101.01	ANDEO *BLANK		
10.00	CER	51 YO (1997)	NOVE '1'	WMK, 03	
1.00	CER		GETCH	12	4293
2.00	CSR.		END		
3.00					
4.00	C.	scrub and edit .	ment contax		
5.00	C.	scrub and edit -	CODE Celler		
7.00	CER		NOVEAGENCO	OFI	
5.00	CORR		EXER CO042		
9.00	C*				
0.00	CER		NOVE #RADJ	\$1MC0	
1.00	C*				
2.00	C*	and the second second			
4.00	C.	scrub and edit -	category code -	cost center oi	
24.00	CFR.		NOVELGPEPO1	\$1EP01	
26.00	C*		NOVILLE PREVI	41RPO1	
7.00	C*	set default valu	e - category cod	e - cost center (01
28.00	C.		3		
9.00	CORR	\$1EP01	IPEQ *BLANK		
30.00	COR	DerP01	IFNE *BLANK		
	CER		NOVEAD&RPO1	@40	
32.00	CER		NOVER #40	040 \$18P01	
32.00	CER	840,1	NOVER840	\$1RP01	
32.00 33.00 34.00	CSER CSER CSER	840,1	NOVER840 IFED	\$18901 040,1	
32.00 33.00 34.00 35.00	CER CER CER CER		NOVEA040 IFED NOVE Z-ADD2	\$1RP01	
32.00 33.00 34.00 35.00 35.00	CER CER CER CER CER	4H	NOVEA040 IFED ···· NOVE · · Z-ADD2 DOMLS40	\$18901 040,1	
32.00 33.00 34.00 35.00 35.00 35.00	CSR CSR CSR CSR CSR CSR		NOVEA040 IFED NOVE Z-ADD2 DOWLE40 IFED	\$18201 040,1 #N	
32.00 33.00 34.00 35.00 35.00 36.00 37.00	CSR CSR CSR CSR CSR CSR CSR CSR	4H	NOVEA040 IFED ···· NOVE · · Z-ADD2 DOMLS40	\$18901 040,1	
12.00 13.00 14.00 15.00 15.00 15.00 17.00 15.00	CSR CSR CSR CSR CSR CSR	4H	MOVERAB4 0 IFED **** Z-ADD2 DOWLE40 IFED ****	\$18201 040,1 #N	
32.00 33.00 34.00 35.00 35.00 37.00 37.00 38.00 39.00 40.00	CSE CSE CSE CSE CSE CSE CSE	4H	NOVERABAD INED NOVE Z-ADD2 DONLEAD INED NOVE END	\$18901 840,1 #N 840,#M	
32.00 33.00 34.00 35.00 35.00 37.00 37.00 39.00 40.00 41.00 42.00		4H	NOVEA840 IMED NOVE Z-ADD2 DOWLE40 IMED NOVE END ADD 1 END NOVEA840,2	\$18901 840,1 #N 840,#M	
2.00 3.00 4.00 5.00 5.00 7.00 8.00 9.00 1.00 1.00 1.00		4H	NOVEA040 IFED NOVE Z-ALD2 DOWLE40 IFED NOVE END ADD 1 END	\$18001 #40,1 #80 #840,#80 #86	
32.00 33.00 34.00 35.00 36.00 36.00 39.00 40.00 40.00 41.00 42.00 43.00		4H	NOVEA840 IMED NOVE Z-ADD2 DOWLE40 IMED NOVE END ADD 1 END NOVEA840,2	\$18001 #40,1 #80 #840,#80 #86	
32.00 33.00 34.00 35.00 36.00 36.00 36.00 39.00 40.00 41.00 41.00 43.00 43.00 45.00		й н 840, Ан	NOVERABLO IPEQ '''' NOVE '' Z-ADDO DOWLSHO IPEQ '''' END ADD 1 END NOVERABLO,2 END END END	\$18901 840,1 संस 840,40 संस १18901	
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Figure 25–22 User Index Server report (part 13)

1146.00	C.			A CONTRACTOR OF A CONTRACTOR	In Section Concerns	
1147.00	C*	mdit upper and 1	ower range - catego	ry code - cost	center oz	
1149.00	CER	Lagpoz	IFNE *DLANK			
1150.00	CER	LINCOL	MOVE '1'	SSETET.		
1151.00	CFR	\$18P02	IFGE LORDON	quarters.		
1152.00	CER	\$1502	ANDLEOWEPO2			
1153.00	COR		MOVE	\$SETST'		
1154.00	CER	(maximum	EDID			
1155.00	CER	\$EPUTST	IFEQ '1'			
1155.00	CER		MOAR , 1,		122627	
1155.00	CER		SETON END		4493	
1159.00	CER		ERID			
1160.00	C*		Land			
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1162.00	C*					
1163.00	CER	E.650P02	IFNE BLANK			
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1165.00	COR		MOAR	\$ESTST'		
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1165.00	CER		MOVE \$1EP02	OKY CONT		
1169.00	CER		CALL 'XO005	4OKL	81	
1170.00	Car		CALL DOUDS		01	
1171.00	CER		PARM	100050		
1172.00	CER	ACERE	IFEQ '1'			
1173.00	CER		MOVE '1'	WMK,09		
1174.00	CER		SETON	40001020-000	4493	
1175.00	CER		224D		10000000	
1176.00	CER		EBID			
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1180.00	C.					
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1182.00	CSR C*	-1893	1105 .0.			
1183.00			Z-ADDG1KEYL	PEREYL	Loading key len	eth record
	CER					
1185.00	CER		Z-ADD01RECL	PERECL	- length, key and	record for
1185.00			Z-ADDQ1RECL MOVELDG1DX1			record for
1185.00 1185.00 1187.00	CER		Z-ADD01RECL	PERKUL PERY	- length, key and	record for ition
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1185.00 1187.00 1187.00 1185.00 1189.00 1199.00 1199.00 1199.00 1199.00 1199.00 1199.00 1199.00 1199.00 1199.00 1200.00 120		Call to User	2-ADD\$IRECL MOVELDSIDEI MOVELDSIDEI MOVELDSIDEI ANDEGEREU CALL 'ZOOIDS' PATH PATH PATH PATH PATH PATH PATH PATH	\$11DX PSFEC \$11DX PSACTH PSACTH PSFULE PSFEC PSFEC \$11DX PSACTH PSACTH PSACTH PSACTH PSACTH PSACTH PSACTH PSACTH PSFEC PSFEC	<pre>length, key and a change or add and same cc index mame Action code runction sule may reagth meeting status idx mame/tib Action code Action sule may reagth may rields may rields</pre>	record for ition Check if
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Figure 25–23 User Index Server report (part 14)

1231.00	C*				
1232.00	CFR		NOVE '1'	\$WET.	
1233.00	COR		END		
1234.00	COR		END		
1235.00	CGR		END		
1236.00	C*	*TNG3	1750 '1'		
1237.00	CER	#GFENO	ANDEO*IERO		
1239.00	CER	WALKNO	Z-ADDI1	4G7880	
1240.00	COR		END	1	
1241.00	C*				
1242.00	CER		END		
1243.00	C.	- 16 - 16 P	영양값의 이번 문제 - 13	223	
1244.00	C*	if errors, set s	ubfile next change	flag.	
1245.00	C*	*1893	1880 '1'		
1247.00	CSR	1093	SETON		32
1248.00	CER		END		555 S
1249.00	C*		1888 C		
1250.00	C*	update all subf:	ile records read.		
1251.00	C*	1000			
1252.00	CGR		MOVER * IN	SHIN	11.14247
1253.00	CSR		UPDATWINDERS SETOF		81
1254.00	CER C*		SET.01		32
1255.00	C*	nead next subfil	le record		
1257.00	C*	terna teras subit.			
1258.00	COR		ADD 1	\$\$IX	
1259.00	CGR		END	1012110	
1260.00	CER		KND		
1261.00	C*	10.2 10.000 0000000000000000000000000000	ANN STREET		
1262.00	C*	If error detects	ed on a add, change	action code to	5 *C*
1263.00	C*	*1893	1750 '1'		
1265.00	CSR	\$WET	ANDEQ'1'		
1265.00	CER	Der.	NOVE 'C'	ACTION	
1267.00	CER		END	10-11-04	
1268.00	C*				
1269.00	CORT	ENDOOS	ENDER		
1270.00	C			************	
1271.00	C*	a characterization and		and the second second	10110-100
1272.00	C.	copy common sub-	routine - might adj	ust alphanumeri	c rield
1273.00	C*				
1274.00	C/CO	PY/JDECPY, CO042			
1276.00	C				
1277.00	C*	copy connon subro	outine - suild allo	wed values work	ATTAV
1278.00	C*				
1279.00		PT JDECPT, C997			
1280.00		• • • • • • • • • • • • • • • • • • • •	· · · <i>· · ·</i> · · · · · · · · · · · · ·	***********	
1251.00	C*				
1282.00	C*	SUBROOTINE SOLO	- update nata sase		
1283.00	C.				
	č.			120210020000020200	
		processing: 1	. update data base	file for delat	e action.
1285.00		processing: 1	. update data base	file for delet	e action.
1285.00	C*		 update data base assess 	file for delet	e action.
1285.00 1286.00 1287.00 1285.00	C* CSR C*			file for delet	e action.
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1285.00 1286.00 1287.00 1285.00 1289.00 1290.00 1291.00 1292.00	C* C* C* C* C*	£010	aboom on, delete all reco	rds by primary	partial key.
1285.00 1287.00 1287.00 1285.00 1290.00 1290.00 1291.00 1292.00 1293.00	C* CSR C* C* CSR CSR	solo If delete actio	DESER	rds by primary	partial key. Lond key length and
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1285.00 1287.00 1287.00 1289.00 1289.00 1290.00 1291.00 1292.00 1292.00 1295.00 1295.00 1295.00 1295.00 1295.00 1295.00 1295.00 1300.00 1300.00 1304.00 1305.00 1305.00 1305.00 1305.00	C* CSR C* C* CSR CSR CSR CSR CSR CSR CSR CSR CSR CSR	soin rf delete actio *1823 Deletion of record from User Index	DESER DE	rds by primary PERETI \$1100 PERETI PERTIE PERTIE PERTIE PERTE PERTE	Lead key length and record length for deletion rdx same/lib action mule key length reay length reay length mutry length mutry length
1285.00 1287.00 1287.00 1289.00 1289.00 1289.00 1289.00 1291.00 1292.00 1292.00 1292.00 1295.00 1295.00 1295.00 1295.00 1295.00 1295.00 1395.00 1305.00 1304.00 1305.00 1306.00 1306.00 1308.00 130	C* CSR C* C* CSR CSR CSR CSR CSR CSR CSR CSR CSR CSR	soin rf delete actio *1823 Deletion of record from User Index	DESER DESER DESER DESER IFRO '1' Z-AEDGIERTZ Z-AEDGIERTZ CALL 'KOOIDE' PARM PARM PARM 'E' PARM 'E' PARM PAR	rds by primary persect persect persect persect persect persect persect persect	Lead key length and record length for deletion rdx same/lib action mule key length reay length reay length mutry length mutry length
1285.00 1287.00 1287.00 1289.00 1289.00 1299.00 1299.00 1292.00 1292.00 1292.00 1295.00 1297.00 1297.00 1297.00 1297.00 1297.00 1297.00 1306.00 1304.00 1305.00 1306.00 1305.00 130	C* CSR C* C* CSR CSR CSR CSR CSR CSR CSR CSR CSR CSR	soin rf delete actio *1823 Deletion of record from User Index	DESER DE	rds by primary PERETI \$1100 PERETI PERTIE PERTIE PERTIE PERTE PERTE	Lead key length and record length for deletion rdx same/lib action mule key length reay length reay length mutry length mutry length
1285.00 1287.00 1287.00 1287.00 1287.00 1289.00 1290.00 1292.00 1292.00 1292.00 1292.00 1295.00 1295.00 1295.00 1295.00 1305.00 1302.00 1302.00 1304.00 1305.00 1305.00 1305.00 1305.00 1306.00 1306.00 1306.00 1306.00 1306.00 1306.00 1308.00 130	C* CSR C* C* CSR CSR CSR CSR CSR CSR CSR CSR CSR CSR	soin rf delete actio *1823 Deletion of record from User Index	DESER DESER DESER DESER IFRO '1' Z-AEDGIERTZ Z-AEDGIERTZ CALL 'KOOIDE' PARM PARM PARM 'E' PARM 'E' PARM PAR	rds by primary PERETI \$1100 PERETI PERTIE PERTIE PERTIE PERTE PERTE	Lead key length and record length for deletion rdx same/lib action mule key length reay length reay length mutry length mutry length

Figure 25–24 User Index Server report (part 15)

1314.00	C			*********		
1315.00	C*					
1316.00	C*		 Load dictionary 	parameters.		
1317.00 1318.00 1319.00	C.					
318.00	CFR.	£998	RECER			
1320.00	C*	22258	EDGER.			
321.00						
322.00	177					
.323.00	C*	pictionary paramet	ers for - pescript	ion ol		
324.00	C.					
325.00	COR		NOVE *BLANK	FEDTRI		
326.00	CGR		MOVEL'DL01'	FEDTRI		
327.00	CGR		CALL 'X9800E'		51	
328.00	C*					
329.00	CFR		PARM	195005		
330.00	OFR	FREER	INSD .0.		5223	
331.00	CER		NOVE FRDECK	BBDL01	40	
332.00	CSR		NOVE FEDTAT	TEDLOI	1	
333.00	CER		NOVE FREC NOVE ERDIAS	ment.ol	1 40	
335.00	CER		NOVE FEDTAD	CMDLO1 GMDLO1	10	
336.00	CER		NOVE FECORE	FUDLOI	1	
337.00	CER		NOVELFREY	Gention	4	
338.00	CSR		NOVE FRET	SUDLO1 RUDLO1	2	
339.00	CER		NOVE FEDVAL	DepLoi	40	
340.00	CER		NOVE FEVAL	AMDL/01	40	
341.00	CER		MOVE FELVAL	LEDLOI	40	
342.00	OFR		NOVE FRUVAL	OMDLO1	40	
343.00	CER		NOVE FREDWR	WEDLO1	30	
344.00	CER		NOVE FELS	JUDL/01	1	
1345.00	CER		MOVE FENNIX	NUDL/01	20	
1346.00	COR		Z-ADD1	#@DLO1	110	
1347.00	CER		NOVE FUELO1	\$1		
348.00	CER		DO #A			
349.00	COR		NULT 10	#@DLO1		
350.00	CER		END			
351.00	CER		END			
352.00	C*					
1354.00	C*	ed at domains a series	store for most a			
1355.00	20	Diccionary param	meters for - cost o	SHEEL		
356.00	C"		NOVE *BLANK	FEDTRI		
357.00	CER		NOVEL NOU!	FEDTAI		
358.00	OFF		CALL 'ISSOOE'	110.041	51	
359.00	C*					
1360.00	COR		PARM	198008		
1361.00	COR	FREEZ	IPED 'O'			
352.00	CER		NOVE FEDECE	DIMCO	4.0	
1363.00	CER		NOVE FEDTAT	THENCO	1	
1364.00	CGR		NOVE FREC	EBNCO	1	
1365.00	CSE		NOVE FROTAS	Canco	40	
366.00	CER		NOVE FEDTRD	GANCO	10	
367.00	CER		NOVE FRCDEC	FIRMCO	1	
368.00			NOVELFREY	SINCO	4	
369.00	CER		NOVE FERT	RINCO	2	
370.00	CER		NOVE FROVAL	Danco Aanco	40	
372.00	CER		NOVE FRUAL NOVE FRLVAL	LANCO	40	
372.00	COR		NOVE FEUVAL	Datecto	40	
374.00	CER		NOVE FREDWE	Waterco	30	
375.00	CSR		NOVE FRLR	JUNCO	1	
376.00	CER		NOVE FENNIX	DIMNECO	20	
377.00	CER		Z-ADD1	\$004CU	110	
1378.00	CER		NOVE FUNCO	**	1000	
379.00			DO #A	1996		
350.00	OFE		MULT 10	#unco		
381.00	CER		END			
382.00	Cart		END			
383.00						
384.00	C*					
365.00	C*	bictionary param	eters for - catego	ry code - cost	center or	
1356.00	C*					
387.00	CSR		NOVE BLANK	FEDTAI		
1358.00	OFR		MOVEL' RP01'	FEDTRI		100
1389.00	COR		CALL 'X9800E'			51
	C.			10.00000000		
	COR	00.000	PARM	ISBOOR		
1391.00		FREER	INED .O.			
1391.00	COR		and the second second second	and the second sec		
1391.00 1392.00 1393.00	CER		NOVE FRDECK	DERPO1	40	
1390.00 1391.00 1392.00 1393.00 1394.00 1395.00	CER CER CER		NOVE FRDECK NOVE FRDEAT NOVE FREC	TWRPO1 TWRPO1 EWRPO1	40	

Figure 25–25 User Index Server report (part 16)

	200				22
96.00 97.00	CSE		NOVE FEDTAS	CHRP01 GHRP01	40
98.00	CSR		NOVE FRODEC		1
99.00			NOVELFERY	FERPO1 SERPO1	4
00.00	CER		NOVE FRET	REEPOL	2
01.00	CER		NOVE FEDVAL	Dampol Asmpol Lampol Dampol	40
	CER		MOVE FEVAL MOVE FELVAL	AGEPOI	40
03.00	CSR		NOVE FRUVAL	Lampol	40
05.00	COR		NOVE FREDWR	WERPO1	30
06.00	CER				
07.00	CER		MOVE FENNIX	BURPO1	20
08.00	CGR		Z-ADD1	#GEPO1	110
09.00	CGR		NOVE FURPOL	# A	
10.00	CSR		DO #A	Annes	
12.00	COR		END	ABUROT.	
13.00	CER		END		
14.00	C*				
15.00	C*				
16.00	C.	Dictionary para	ameters for - catego	ry code - cost	center oz
17.00	C.				
18.00	COR		NOVE FALM NOVE FARFOL DO #A MULT 10 END END MULT 10 END END NOVES *BLANK NOVES: FROM NOVES: FROM NOVES: FROM NOVES: FROM CALL 'X9800E' 	FRDIAI	
19.00	COR		CALL (TRACOF!	FROTAT	81
21.00	CSR C*		CALL ANDOR		01
22.00	CER		PARM	ISSOOR	
23.00	CSR CSR CSR	FREER	IPEO 'O'	23223	
			NOVE FROSCE	DURPO2	40
25.00	CSR CSR CSR		NOVE FEDTAT	TURPO2	1
26.00	CER		MOVE FREC	TWRPO2 BartPO2 CWRPO2 GWRPO2 FWRPO2 SWRPO2	1
27.00	CSR		NOVE FEDTAS	CMRP02	40
28.00	CSR		MOVE FROTAD MOVE FRODEC	GERPO2	10
\$8.00	CRE		NOVELFREY	SMEPO2	1
1.00	COR		NOVE FRET	REEPO2	2
\$2.00			NOVE FEDVAL		40
\$3.00	CER		NOVE FEVAL	Agrpo2	40
\$4.00	CGR		NOVE FELVAL	LERPO2	40
\$5.00	CER		NOVE FRUVAL	UBRPO2 MBRPO2	
\$6.00	CER		NOVE FREDER	Junpo2	30
57.00	CER		MOVE FELE MOVE FENNIX	JURPO2 NUMPO2	1 20
9.00	CORE		Z-ADD1	\$GEP02	110
10.00	COR		NOVE FREPOZ	43	
1.00	CER		D0 #3	12	
42.00	CER		MULT 10	#GEPO2	
43.00	CGR		END		
4.00	CER		END		
6.00	C*				
17.00	C.	pictiona	ry parameters for -	concany	
17.00	C*				
19.00			NOVE * BLANK	FEDTAI	
\$8.00	CER		MOVEL'CO'	FRDIAI	
\$1.00			CALL 'X9800E'		61
\$2.00	C*				
53.00	CER	FREER	PARM IFEQ 'O'	1980.05	
\$5.00	CER	risanti	NOVE FROSCR	SUCO	40
\$6.00	CER		NOVE FROTAT	TOCO	1
\$7.00	CSR		NOVE FREC	TWCO	ĩ
58.00	COR		MOVE FEDTRE	CMCO	40
\$9.00			NOVE FEDTAD	G@C0 7@C0	10
50.00	CER		NOVE FRCEEC	FOCO	1
51.00	CER		NOVELFREY NOVE FRET	STOPCO FORCO	4
52.00 53.00	CSR		MOVE FRET MOVE FREVAL	POPCO DIRECTO	40
\$4.00	000		MOVE ERVAL	Darco Aarco	40
5.00	CSR		NOVE FELVAL	LOCO	40
56.00	Cart		NOVE FRUVAL	Laco Caco	40
\$7.00	COR		NOVE FREDWR	Marco Janco 1980:00	30
58.00	CSE		NOVE FELS	3020	1
59.00	CGR		NOVE FENNIX	1980-0	20
70.00	COR		Z-ADD1	#@C0	110
71.00			NOVE FOCO		
72.00	CER		DO #A NULT 10	+eco	
	CER		NULT 10	4000	
4.00	COLUMN 1				

Figure 25–26 User Index Server report (part 17)

	CSR.		END		
1476.00	C*				
1478.00	C*	create or clear	the penonstration	user index	
1479.00	C*				
1450.00	C*				
1451.00	COR		NOVE *BLANKS	PGERR	
452.00	COR		CALL 'J98CE009J'	95	Check to see if
453.00	C*		PARM 'PINDER		
1454.00	COR			PSCBJT 10 PSLIB 10	
456.00	CORR		PARM 'QTEMP PARM '*UERIDR'	PSTYPE 7	already exists
487.00	CORR		PARM '*NORE	PSMRR 10	
458.00	CORE		PARM ' *NORE	PSAUT 10	
489.00	CER		PARM	PSERN 1	
490.00	C*				224
491.00	C*	if it doesn't e	mist, create it.		
1492.00	C*	PERE		Check error status par	ameter to
1493.00	Car.	PWEER	IFEQ '1'	see if User Index exist	8
1494.00		and the second second second second second second second second second second second second second second second	CALL 'OUSCRIUI'		
1496.00	COR	Create User	Contro guardian		and the second second second second second second second second second second second second second second second
497.00	COR	Index if User	FARM	SIIDA	rdx wame/Lib
498.00	CER	Index did not	PARM * PLANKS	PEATE 10	Extnd Attb
499.00	COR	already exist	PARM 'F'	PSPNLS 1	Length Atrb
1500.00	Cieff	and any same	PARM	\$1RECL	entry Length
1501.00	CER		PARM '1'	PEKIND 1	key insrth
1502.00	COR		PARM 'O'	\$1KEVL PEIMUP 1	mey Length Delay update opti = randm
1503.00	CER		PARM 'O'	PEIMOP 1 PEOPTM 1	Delay update
1505.00	COR		PARM 'ALL'	PEIDAU 10	Public Auth
1506.00	COR		PARM SITERT	POTENT 50	Index pescr
1507.00	C*				
1508.00	C*	if it does exis	, tlear it.		
1509.00	C*				
1510.00	COR		ELCE	1	.oad key length, record
1511.00	C.		La anna da mana		ength, and key to clear
1512.00	CER		Z-ADD\$1KEY1 Z-ADD\$1RECL		Jser Index if it already
1514.00	CORE		MOVE *PLANE		
1515.00	C*		HOTE ERITE	e	xists
1516.00	CER		CALL 'ROOIDE		
	C*				
1517.00					
1518.00	COR		PARM	\$1IDI	rdx wame/tib
1517.00 1518.00 1519.00	CER	02425/02	PARM 'D'	\$11DX PEACTN 1	Action
1518.00 1519.00 1520.00	CSR CSR CSR	Delete all	PARM 'D' PARM 'BQ'	PEACTN 1 PERULE 2	Action Action mule
1518.00 1519.00 1520.00 1521.00	COR COR COR COR	Delete all records from	PARM 'D' PARM 'D' PARM	PEACTN 1 PERULE 2 PEKEYL 30	Action Action mule may Length
1518.00 1519.00 1520.00 1521.00 1522.00	CSR CSR CSR CSR CSR		РАЛИ 'D' РАЛИ 'BQ' РАЛИ РАЛИ	PGACTN 1 PGRULE 2 PGKEYL 30 PGKY 120	Action Action mule May Length May Fields
1518.00 1519.00 1520.00 1521.00 1522.00 1523.00	CSR CSR CSR CSR CSR CSR CSR	records from	РАЕМ 'D' РАЕМ 'EQ' РАЕМ РАЕМ РАЕМ	PERCTN 1 PERULE 2 PEREYL 30 PEREYL 30 PERECL 30	Action Action mule may rength may rields mntry Length
1518.00 1519.00 1520.00 1521.00 1522.00 1523.00 1523.00	CSR CSR CSR CSR CSR	records from	РАЕМ 'D' РАЕМ 'EQ' РАЕМ РАЕМ РАЕМ РАЕМ	PGACTN 1 PGRULE 2 PGKEYL 30 PGKY 120	Action sule say Length may rields smiry Length smiry
1518.00 1519.00 1520.00 1521.00 1522.00 1523.00 1523.00 1524.00 1525.00	CSR CSR CSR CSR CSR CSR CSR CSR	records from	РАЕМ 'D' РАЕМ 'EQ' РАЕМ РАЕМ РАЕМ	PERCEN 1 PERULE 2 PEREVI 30 PEREVI 120 PERECI 30 PERECI 120	Action Action mule may rength may rields mntry Length
1518.00 1519.00 1520.00 1521.00 1522.00 1523.00 1524.00 1524.00 1525.00	CSR CSR CSR CSR CSR CSR CSR CSR	records from	РАЕМ 'D' РАЕМ 'EQ' РАЕМ РАЕМ РАЕМ РАЕМ	PERCEN 1 PERULE 2 PEREVI 30 PEREVI 120 PERECI 30 PERECI 120	Action sule say Length may rields smiry Length smiry
1518.00 1519.00 1520.00 1521.00 1522.00 1523.00 1525.00 1525.00 1525.00 1526.00 1527.00 1528.00		records from	РАНИ "D' РАНИ "D' РАНИ РАНИ РАНИ РАНИ РАНИ РАНИ РАНИ	PERCEN 1 PERULE 2 PEREVI 30 PEREVI 120 PERECI 30 PERECI 120	Action Mule May Longth May relate Entry Length Entry Mirrof status
1518.00 1519.00 1520.00 1522.00 1522.00 1522.00 1524.00 1525.00 1526.00 1526.00 1528.00 1528.00	CSR CSR CSR CSR CSR CSR CSR CSR CSR CSR	records from User Index	рали рали рали рали рали рали рали рали	PGACTN 1 PGRULE 2 PGREVI 30 PGREVI 120 PGRECI 120 PGREC 120 PGSTS 1	Action Mule May Longth May relate Entry Length Entry Mirrof status
1518.00 1519.00 1520.00 1521.00 1522.00 1523.00 1525.00 1526.00 1526.00 1528.00 1529.00 1529.00		records from	рали рали рали рали рали рали рали рали	PGACTN 1 PGRULE 2 PGREVI 30 PGREVI 120 PGRECI 120 PGREC 120 PGSTS 1	Action Mule May Longth May relate Entry Length Entry Mirrof status
1518.00 1519.00 1521.00 1522.00 1522.00 1523.00 1524.00 1525.00 1526.00 1527.00 1528.00 1529.00 1530.00		records from User Index set subroutine	PARM "D' PARM "BQ" PARM PARM PARM PARM PARM PARM PARM PARM	PERCTN 1 PERHIE 2 PERKEYI 30 PERKEYI 30 PERKEYI 30 PERKEYI 30 PERKEYI 120 PERKEYI 1	Action Mule May Longth May relate Entry Length Entry Mirrof status
1518.00 1519.00 1520.00 1521.00 1522.00 1523.00 1524.00 1526.00 1526.00 1526.00 1526.00 1529.00 1529.00 1531.00		records from User Index set subroutine	рали рали рали рали рали рали рали рали	PGACTN 1 PGRULE 2 PGREVI 30 PGREVI 120 PGRECI 120 PGREC 120 PGSTS 1	Action Mule May Longth May relate Entry Length Entry Mirrof status
1518.00 1519.00 1520.00 1521.00 1522.00 1522.00 1524.00 1525.00 1526.00 1527.00 1528.00 1529.00 1529.00 1551.00 1551.00		records from User Index sat subroutine MON	RARM "D" PARM "BQ" PARM BQ" PARM PARM PARM PARM FARM END execution flag. E '1'	PERCTN 1 PERHIE 2 PERKEYI 30 PERKEYI 30 PERKEYI 30 PERKEYI 30 PERKEYI 120 PERKEYI 1	Action Mule May Longth May relate Entry Length Entry Mirrof status
1518.00 1519.00 1520.00 1521.00 1521.00 1522.00 1523.00 1526.00 1526.00 1526.00 1528.00 1529.00 1529.00 1552.00 1552.00 1552.00		records from User Index set subroutine MOT BED995	PARM 'D' PARM 'BQ' PARM 'BQ' PARM PARM PARM PARM END EXCLUTION flag. E '1' ENDER	\$998 1 \$	Action Mule May Longth May relate Entry Length Entry Mirrof status
1518.00 1519.00 1520.00 1521.00 1522.00 1522.00 1524.00 1526.00 1526.00 1528.00 1529.00 1529.00 1531.00 1531.00 1534.00 1534.00 1534.00		records from User Index set subroutine MOT. EMD998	RARM 'D' PARM 'BQ' PARM 'BQ' PARM PARM PARM PARM END execution flag. E '1' ENDER	\$998 1 \$	Action mule Action mule New Length Ref Fields Entry Length Entry Error status
1518.00 1519.00 1520.00 1521.00 1521.00 1522.00 1524.00 1525.00 1526.00 1526.00 1529.00 1530.00 1530.00 1532.00 1532.00 1532.00 1532.00 1532.00 1534.00 1534.00		records from User Index sat subroutine NOV END995 SUBROUTINE 2993	PARM 'D' PARM 'BQ' PARM 'BQ' PARM PARM PARM PARM FARM END execution flag. E '1' ENDER	\$998 1 \$	Action mule Action mule New Length Ref Fields Entry Length Entry Error status
1518.00 1519.00 1520.00 1521.00 1522.00 1522.00 1525.00 1527.00 1527.00 1527.00 1529.00 1529.00 1530.00 1531.00 1534.00 1534.00 1534.00 1536.00		records from User Index set subroutine MOT. EMD998	PARM 'D' PARM 'BQ' PARM 'BQ' PARM PARM PARM PARM FARM END execution flag. E '1' ENDER	\$998 1 \$	Action mule Action mule New Length Ref Fields Entry Length Entry Error status
1116.00 1519.00 1520.00 1520.00 1520.00 1520.00 1524.00 1524.00 1524.00 1524.00 1526.00 1530.00 1530.00 1533.00 1534.00 1534.00 1534.00 1534.00 1534.00 1534.00 1534.00 1535.00 1536.00 1536.00		records from User Index set subroutine NOT BED998 SUBROUTINE S995	RARM "D' PARM "SQ" PARM PARM PARM PARM PARM PARM FARM PARM FARM PARM PARM PARM PARM PARM PARM PARM P	\$998 1	Action mule Action mule New Length Ref Fields Entry Length Entry Error status
1116.00 1519.00 1520.00 1521.00 1522.00 1522.00 1524.00 1525.00 1525.00 1526.00 1526.00 1528.00 1530.00 1533.00 1533.00 1533.00 1533.00 1535.00 1535.00 1535.00 1535.00 1536.00 1536.00 1538.00 1538.00		records from User Index sat subroutine NOV END995 SUBROUTINE 2993	END EXEMPTON PARMY P	perter 1 perter 2 perter 120 perter 120 pere	Action mule may Longth may relats mniry Length mniry mrrof status
1116.00 1519.00 1521.00 1521.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1523.00 1533.00 1533.00 1533.00 1533.00 1535.00 1535.00 1535.00 1535.00 1535.00 1535.00 1535.00 1538.00 1540.00 154		records from User Index set subroutine NOT BED998 SUBROUTINE S995	PARM 'D' PARM 'BQ' PARM 'BQ' PARM 'BQ' PARM 'BQ' PARM 'BQ' PARM 'BARM 'B	pSRCTN 1 PSRUL 2 PSKEVI 30 PSKEVI 30 PSKEC 30 PSREC 120 PSSTS 1 \$998 1 \$998 1 \$998 1	Action mule Action mule may reads multy Length Entry multiple
1116.00 1519.00 1521.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1523.00 1528.00 1533.00 1533.00 1533.00 1535.00 1536.00 1546.00 156		records from User Index set subroutine NOT BED998 SUBROUTINE S995	PARM 'D' PARM 'BQ' PARM 'BQ' PARM 'PARM PARM 'PARM 'PARM PARM 'PARM	psRcTH 1 psRtHL 2 psRtHL 30 psRtHC 120 psRtHC 120 psRtHC 120 pstHC 120	Action mule may Longth may relats mniry Length mnrof status
1116.00 1519.00 1521.00 1521.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1534.00 153		records from User Index set subroutine NOT BED998 SUBROUTINE S995	PARM 'D' PARM 'BQ' PARM 'BQ' PARM 'PARM PARM 'PARM 'PA	psRcTH 1 psRtHL 2 pSRHHCL 30 pSRHHC 120 pSRHHC 120 pSRHHC 120 pSHHC 10 pSHHC 10 pSHC 10 pSHC 10 pSHC 10 pSHC 10 pSHC 10 pSHC 10 pSHC 10	Action mule may Longth may relats mniry Length mnrof status
1116.00 1120.00 1221.00 1521.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1523.00 1530.00 1530.00 1532.00 1542.00 154	888888888888888888888888888888888888888	records from User Index set subroutine NOT BED998 SUBROUTINE S995	PARM 'D' PARM 'BQ' PARM 'BQ' PARM 'PARM PARM 'PARM 'PA	psRcTH 1 psRtHL 2 pSRHHCL 30 pSRHHC 120 pSRHHC 120 pSRHHC 120 pSHHC 10 pSHHC 10 pSHC 10 pSHC 10 pSHC 10 pSHC 10 pSHC 10 pSHC 10 pSHC 10	Action mule may Longth may relats mniry Length mnrof status
1118.00 1519.00 1520.00 1520.00 1522.00 1522.00 1522.00 1525.00 1526.00 1526.00 1526.00 1528.00 1528.00 1530.00 1530.00 1530.00 1530.00 1530.00 1535.00 1535.00 1535.00 1536.00 1546.00 154		records from User Index set subroutine NOT BED998 SUBROUTINE S995	PARM 'D' PARM 'BQ' PARM 'BQ' PARM 'PARM PARM 'PARM PARM 'PARM PARM 'PARM	parts 1 parts 2 parts 3 parts 130 parts 120 parts 120 parts 1 \$998 1 \$998 1 \$998 1 concrean text. cruen title data an iorized acces, cant nova to video scree a kay list. kays. cambters.	Action mule may Longth may relats mniry Length mnrof status
1116.00 1120.00 1221.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1530.00 1530.00 1533.00 1533.00 1533.00 1533.00 1533.00 1534.00 1534.00 1534.00 1535.00 1535.00 1535.00 1535.00 1535.00 1535.00 1535.00 1535.00 1536.00 1546.00 154		records from User Index set subroutine NOT BED998 SUBROUTINE S995	RANN 'D' PARN 'BQ' PARN 'BQ' PARN	percent 1 percent 2 percent 30 percent 30 percent 30 percent 30 percent 120 percent 30 percent 30 p	Action mule may Longth may relats mniry Length mnrof status
1118.00 1519.00 1520.00 1522.00 1522.00 1522.00 1522.00 1522.00 1524.00 1525.00 1526.00 1527.00 1530.00 1533.00 1533.00 1533.00 1533.00 1535.00 1545.00 154	888888888888888888888888888888888888888	records from User Index set subroutine NOT BED998 SUBROUTINE S995	RANN 'D' PARN 'BQ' PARN 'BQ' PARN	parts 1 parts 2 parts 3 parts 130 parts 120 parts 120 parts 1 \$998 1 \$998 1 \$998 1 concrean text. cruen title data an iorized acces, cant nova to video scree a kay list. kays. cambters.	Action mule may Longth may relats mniry Length mnrof status
1116.00 1120.00 1220.00 1221.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1522.00 1523.00 1530.00 1530.00 1533.00 1533.00 1533.00 1534.00 1535.00 1535.00 1535.00 1535.00 1535.00 1535.00 1535.00 1535.00 1535.00 1535.00 1535.00 1536.00 1546.00 154		records from User Index set subroutine NOT END995 SUBROUTINE 5995 Processi	RANN 'D' PARN 'BQ' PARN 'BQ' PARN	percent 1 percent 2 percent 30 percent 30 percent 30 percent 30 percent 120 percent 30 percent 30 p	Action mule may Longth may relats mniry Length mnrof status
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1118.00 1120.00 1220.00 1221.00 1222.00 1222.00 1222.00 1222.00 1225.00 1225.00 1225.00 1225.00 1225.00 1225.00 1235.00 1530.00 1530.00 1532.00 1532.00 1535.00 1535.00 1535.00 1535.00 1536.00 1536.00 1536.00 1536.00 1536.00 1536.00 1546.00 155		records from User Index set subroutine NOT END995 SUBROUTINE 5995 Processi	RANN 'D' PARN 'BQ' PARN 'BQ' PARN	percent 1 percent 2 percent 30 percent 30 percent 30 percent 30 percent 120 percent 30 percent 30 p	Action mule may Longth may relats mniry Length mnrof status
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Figure 25–27 User Index Server report (part 18)

		1993년 2011년 2011년 8월 1997년 19	영상은 이 가슴을 잘 못 하는 것이 같아.		
1557.00	C.	Test for auto 1	nquiry function.		
1558.00	C.				
1559.00	CER	\$AOTO	IPNE *BLANK	5/23 (\$25) (57)	
1560.00	CGR		NOVE '1'	\$AUTO	1
1561.00	CGR		END		
1562.00	C*				
563.00	C.				
564.00	C.	Load video scre	en text.		
1565.00	C.				
1566.00	CER		NOVELageILE	PEREY	10
567.00	CGR		Z-ADD006	PEVTL	30
1568.00		T JDECPT, COOSC			
569.00					
578.00	C.				
1571.00	C*	Load error ness	ages array.		
572.00	C*		25 B B B B B B B B B B B B B B B B B B B		
573.00	CGR		NOVE '0001'	ENK, 01	INV Action
1574.00	CER		NOVE '0002'	ENK, 02	INV Key
1575.00	COR		NOVE '0003'	ENK, 03	inv planks
1576.00	CER		NOVE '0004'	ENE, 04	INV Date
1577.00	CER		NOVE '0005'	ENK. 05	INV MAXL MDr
1578.00	COR		NOVE .0007.	ENK, 06	IN USO
1579.00	CER		MOVE '0025'	ENK. 07	INV values
1580.00	COR		MOVE '0026'	ENK, OS	INV MCU
1581.00	CGR		NOVE '0027'	ENK, OS	INV Desc Ttl
1582.00	C*				
1583.00	C*				
1584.00	C*	Load invalid ac	tion code array.		
1585.00	C*				
1556.00	CER		NOVER'	BEIAC	
1587.00	C*				
1558.00	C*				
1559.00	C*	mitialize subf	ile display		
1590.00	C*	internet part	me amprey.		
1591.00	CER		Z-ADDO	11	
592.00	CER		Z-ADD15	SPGGZ	30
1593.00	CER		DO SPGEE	design of the	20
1594.00	CER		ADD 1	11	
1595.00	CER		NOVER IN	SHIN	
1596.00	CER		WEITEINDERG		22
1597.00	CER		END		
1598.00	CER		Z-ADDII	SGVII	
1599.00			2-40011	DRATT	
1608.00	C*				
601.00	C*	Load system dat			
1601.00	C*	hoad system dat	·		
	CFR		TT THE P	SWEE12	100
1603.00			TIME		120
1604.00	COR		MOVE \$WEEL2	\$\$EDT	60
1605.00	CER	E200999	ENDER		

Figure 25–28 User Index Server report (part 19)

26

File Servers

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
	10.000	00000	
	PARM	PS@@1	
	PARM	I0101	

PARM	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.

PARM (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)	The operation to be performed to the file. The valid values are presented below:
	CHAIN Chain by key list or RRN
	CLOSE Close the access path
	DELET Delete current record or by key or RRN
	EXIST Test existence of record by key
	OPEN Open access path (optional)
	READ Read next record
	READE Read next equal key
	READP Read previous record
	REDPE Read previous equal key
	SETGT Set greater than key
	SETHV Set greater than with *HIVAL
	SETLL Set lower limit by key
	SETLV Set lower limit with *LOVAL
	UPDAT Update locked record
	UPDATC Update current record
	WRITE Write new record
	UNLCK Unlock current record
@@LOCK (1)	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.
	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.
@@CHGR (1)	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:
	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)
	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.
	W – Call the Changed Record Window (P0000U) that will prompt you for what action to take. Use this option with interactive programs only.
@@KLST (10)	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).
	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.

PARM (Length)	Description 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.			
@@KNUM (5,0)				
@@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 though 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

 Data Dictiona Model Relation CASE Profiles Function Key 	
 Vocabulary ôv 	Access 5 Key List Path L Item <u>Description</u> ABRY01 PoloLA AN8 Address Number
	ABKY02 F0101LB DC Description - Compressed
election or command	ABRY03 F0101LC PH1 Phone Number
HER EL	ABKY04 P0101LD PAS Parent Number
hur, Jan 6, 1994	ABKY05 F0101LE * ANS Address Number

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

2.00	C.					
2.00						09.11.
4.00	C*					10.11.
4.00	C'Index of Examp	les:				10.11.
	C*					10.11.
5.00	C.					10.11.
6.00	C*	Scan For:	To Find:			10.11.
7.00	C*					10.11.
8.00	C*	1.1	File Server C	alls		10.11.
9.00	C*	1.1.1	Chain			10.11.
10.00	C*	1.1.2	Close			10.11.
1.00	C*	1.1.2	Delete			10.11.
2.00	C*	1.1.4	Existence Te	et		10.11.
3.00	C*	1.1.5	Open			10.11
4.00	C*	1 1 6	Frad			10.11
5.00	e.	1.1.7	Read Frunt			10.11
5.00	<i>a</i> *	1.1.5	Read Previou	-		10.11
00	C*	1.1.9	Read Previou	- Ernal		10.11
	C*	1.1.10	Sat Greater	Than		10.11
9.00		1 1 11	Cob Longs I.e.			10.11
9.00	c.	1.1.11	Net Lover La	Ter.		10.11
0.00	C*	1.1.12	updace			
1.00		1.1.1.4	Write			10.11
2.00	C*	1.1.14	To Find: File Server C Chain Close Delete Read Equal Read Equal Read Previou Set Greater Set Cover Le Update Write Write Unlock			10.11
3.00	C.	2.1.1	109031			19.01
4.00	Š					10.11
	G.	100 million 100 million				10.11
6.00	C*1.1 File ferr C* C*Determine from C*access path be C*If the operation C*the key list a C*the format is C*CapPMT in 5909 C* C* C*	Ner Calle:				10.11
7.00	C.	-				09.11
3.00	C*Determine from	P92KL what the	a key list name	is for the		09.11
9.00	C'access path be	ing used; this	name is moved	to the GERLET.		09.11
0.00	C*If the operation	on uses a key .	list, determine	how many keys		09.11
1.00	C*the key list :	epresents; this	s number is Z-AL	DDed to wathin.		09.11
2.00	C'The format is	the release lev	rel (A61) and ce	an be moved to		10.11
2.00	C"eapMT in \$999	once for the re	sat of the call			10.11
4.00	C*					09.11
5.00	C*					09.11
6.00	C* 111 C+	min.				10.11
- 00	<i>C</i> *					10.11
3.00	Ct old or	de :				10.11
9.00	000	GRAIND	pielo	8199		10.11.
	C* C* 1.1.1 CF C* Old Cc CSFR J C* New Cc CSFR CSFR CSFR	CENTRA CENTRA		0100		10.11
0.00		3				10.11
1.00	C- HEW CO	and the second s	GEFNT			10.11
12.00	Cars	HOVEL ABKYO4	CLURI .			10.11
12.00	Clark	MOART. WRUTCH.	0001011			
4.00	CSR	MOAE, NA MOAE, CHUIN,	020757			10.11
5.00	COR	HOAE .N.	DELOCIC			05.12
16.00	CSR	Z-ADD2	NUICHSID			10.11
7.00	COR	CMTT . IboJ01.				10.11
10.00	C.					10.11
19.00	CER	PARM	9.9361			10.11
0.00	COR	PARM	10101			10.11
1.00	CER COLOR	COMD .ET.		99		10.11
2.00	CER GETOR	PARN COMP 'RL' COMP 'NP'		81		10.11
3.00	C* New Co Care Care Care Care Care Care Care Care					10.11
4.00	C*					10.11
5.00	C* 1.1.2 Cl	OB6:				10.11
6.00	C*					10.11
7.00	C* old c	ode:				10.11
8.00	COR	CLOGEF090214	5	99		10.11
9.00	C*	23				10.11
0.00	C* New C	ode:				10.11
1 00	CORE .	MOVELY BOLL	2000007			10.11
6.00 7.00 8.00 9.00 0.00 1.00 2.00	COR	MoNUT COLUMN	A AMELON			10.11
2.00	CER	NoVEL GLEYO	ADDER			10.11
4.00	CSE	Call (Ynose)	ST ST ST ST ST ST ST ST ST ST ST ST ST S			10.11
5.00	CSR C*					
6.00	000		20.000	The second second second second second second second second second second second second second second second s		10.11
	CER		204,824	P57801		10.11
7.00	COR		FAIM FAIM COMP ' ERE	10902		10.11
00.6	COR	0008	COMP 'SPOR		99	10.11
9.00	C*					10.11
0.00	C* 1.1.2 De C* 01d	0				10.11
1.00	C* 1.1.2 De	lets:				10.11
2.00	C.					10.11
3.00	c* old	Code:				10.11
	CORE		DELETI010	18	99	10.11
5.00	C*					10.11
- OD	C* New	Code:				10.11
7.00	CSR	NOVEL'AG1'	GOFMT			10.11
3.00	CSE	NOVEL ABRYON				10.11
	COR	NOVEL' DELET'				10.11

Figure 26–3 File Server Example (part 1)

COR		CALL 'EF0101'			1-00:1-1-:-2
C*					
CER		PARM	PC801		10.11.5
CER		PARM	10101		10.11.5
CER	ge ton	COMP 'RL'	10101	99	10.11.5
	and TOLK	COMP. ML.		22	
C*	10 Star 10 Star 10				10.11.5
C*	old Code:				10.11.5
CER	ARCYOR	DELETI01019		8399	10.11.5
C*					10.11.5
C.	New Code:				10.11.5
C	DRIM CODE:	1000000000000000			
CER		MOVEL'AS1'	aaper		10.11.9
COR		NOVEL'ABY02'	GORLET		10.11.9
CORR		MOVEL DELET .	GOOPER.		10.11.5
CEL		E-ADD3	OCCUPATION OF THE OCCUPATION O		10.11.5
CORE		CALL 'XF0101'			10.11.5
C*		CHIR APOINT			10.11.5
CER		1200000	PC 891		
		PARM			10.11.5
CER		PARM	10101		10.11.5
CER	ROIGE	COMP 'EL'		99	10.11.5
CER	BBIOR	COMP 'NF'		52	10.11.5
C*					10.11.5
C*					10.11.5
	ananancan				
C.	1.1.4 Existence	THURE I			10.11.9
c.	1223 33				09.11.9
C ⁻	Old Code:				09.11.5
CER	ADICYO2	SETLLIGIOID		9952	10.11.5
C*		201202000000000000000000000000000000000		2-22.25	09.11.5
C*	New Code:				09.11.5
	Dear Code:	100000000000000	2-21/2-21		
CER		NOVEL'AS1' NOVEL'AS1'	002117		10.11.5
CER					10.11.5
CORE		MOVEL'EXIST'	GBOPER		10.11.5
CER		5-ADD3	00027.04		09.11.9
COR		CALL 'EFOIOL'	a and a start		10.11.9
C*		CHIE APOIDI			09.11.5
5					
CER		PARM	P5881		09.11.9
CER			10101		10.11.5
CER	GOIOR	COMP 'YES'		82	10.11.5
CER	GOIOR	COMP 'ERR'		99	11.12.5
C*		Corn kill	A-10-0000000000000000000000000000000000		09.11.9
C.					10.11.9
C*	1.1.5 Open:				10.11.5
C*	1.5				10.11.9
C*	old Code:				10.11.9
COR		OPEN FOODS			10.11.9
C*		09424 90000			10.11.9
C*					
C.	New Code:	지않는 것이 같은 것이 같은 것이 같이 없다.			10.11.5
CER		NOVEL'AG1'	007977		10.11.5
CORR		NOVEL NCKY01	GettleT		10.11.5
Call		NOVEL, 'OPEN '	GROPPE		10.11.5
CER		CALL 'TF0006'			10.11.5
		CHILL IFO005			
C*		and the second se	0.000		10.11.5
CER		PARM	PG881		10.11.9
CER		PARM	10005		10.11.9
C*					10.11.9
C*					10.11.9
č.	1.1.6 Read:				10.11.5
C.	1.1.0 5000:				
C	1122003				10.11.5
C*	old Code:				10.11.5
COR		READ I0901A		9952	10.11.5
C*					10.11.5
C*	New Code:				10.11.5
CER		NOVEL'AG1'	GEFHT		10.11.5
		MOVEL GREYOl'	Three C		
CER		MOWEL GMEYO 1'	Greecher L		10.11.5
CGR		NOVEL READ .	GEOFER		10.11.9
COR		NOVE 'N'	GGLOCK		05.12.9
COR		CALL 'XF0901'			10.11.9
Ca					10.11.5
CFR		PARM	P5881		10.11.5
CGR		PARM	10901		10.11.9
CER	GGIOR	COMP ' BOP'		82	10.11.9
CER	GOIOR	COMP 'EL'		99	10.11.5
C*					10.11.5
C*					10.11.9
	tottotta anna anna anna an				
C*	1.1.7 Read Equal	13			17.11.5
C*					10.11.5
C*	old Code:				10.11.9
CER		READEI0101C		9957	10.11.5
Cak	Auto 10.2			100 C	10.11.5
c.	201 - 2022B				
- C	New Code:				10.11.5
~		MOVEL'AS1'	CHARTER		10.11.5
COR					
CSTR		NOVEL ADEVO 2 *	CHARGE CLAPPE		10.11
CER		NOVEL ABRYON	GBELGT		
COR		NOVEL' ABRY03' NOVEL' READE'	GBICLET GBOPER GBLOCK		10.11.9

Figure 26–4 File Server Example (part 2)

53.00	CSR		CALL 'XP0101'			10.11.
4.00	C*					10.11
\$5.00	C.SR		FRIM			10.11.
\$5.00	CSR			10101		10.11.
\$7.00	CAR	meron	COMB ,NE.		67	10.11.
55.00	CAR	000000	COMP 'RL'		99	10.11.
59.00	C*	NOIGE				10.11.
70.00	C*					17.11.
71.00	C*	1.1.8 Read Pro	evicus:			17.11.
72.00	C*					17.11.
72.00	C*	old Code:				17.11.
74.00	CSR		READFIGSOIR		9962	17.11
75.00	C*					17.11
75.00	C*	New Code:				17.11
77.00	CSR		MOVEL'AG1' MOVEL'GMET02' MOVEL'READP'	10000000000		17.11
77.00	CSR		MOTOR CONTRACT	BRELET		17.11
79.00	CSE		MOVEL ' READP'	GROUPER.		17.11
80.00	CGE		MOVE 'N'	BRLOCK		05.12.
81.00	CSR		CALL 'XP0901'			17.11
82.00	C*					17.11
			FAIN	10021		
82.00	CSE		FAIN	PGB21		17.11.
			FARM	10901		
85.00	CSE	300066	COMP 'BOP'		52	17.11.
85.00	CARE	BOIDE	COMP 'RL'		99	17.11.
87.00	C*					17.11.
55.00	C.	11.0.000 Dec. 10.000 - 000	1			10.11.
89.00	G.	1.1.9 Read P:	revious Equal:			10.11.
90.00	C* C* C*	old Code: ABKY04				10.11.
90.00	C*	Old Code:	6673			10.11.
	CSE	ABKY04	REDFEIGlolc		9987	10.11.
92.00						10.11.
94.00	c.	New Code:				10.11.
95.00	CSR	1907 1997 1987	MOVEL'AS1' MOVEL'ARKY03'	BRENT		10.11.
95.00	CSR		MOVEL 'AREYO'	GREAT		10,11
97.00	COR		MOAE, N. MOAE, WOAE,	OF CODES		10.11.
93.00	CAR		MOOTH AND	and o car		05.12
99.00	CSE		CALL 'XP0101'	- Garbo Ch		10.11
00.00	C*		CALL APOIDI			10.11.
01.00	CSE		RAIN	PG001		10.11
02.00	CSR		FRIEN	10101		10.11.
03.00	CSR	001000	COMP 'NE'		87	10.11.
04.00	CAR					10.11.
			worker into		22	
05.00	C*					10.11.
05.00	C*			5101107700		10.11.
05.00	5:	1.1.10 Set Gr				10.11. 10.11. 10.11.
05.00	5:	1.1.10 Set Gr				10.11. 10.11. 10.11. 10.11.
05.00 06.00 07.00 03.00 09.00	c. c.	1.1.10 Set Gro	ester Than:			10.11. 10.11. 10.11. 10.11. 10.11.
05.00 05.00 07.00 03.00 09.00 10.00	C* C* C* CSE	1.1.10 Set Gro			5495	10.11. 10.11. 10.11. 10.11.
05.00 05.00 07.00 03.00 09.00 10.00	C* C* C* CSE	1.1.10 Set Gro	ester Than:	01011101400		10.11. 10.11. 10.11. 10.11. 10.11. 10.11.
05.00 05.00 07.00 01.00 09.00 10.00 11.00	C* C* C* CSE	1.1.10 Set Gr Old Code: GBKEY	ester Than: SETGTI0902A			10.11. 10.11. 10.11. 10.11. 10.11.
05.00 06.00 07.00 01.00 09.00 10.00 11.00 12.00	C* C* C* CSE	1.1.10 Set Gro	ester Than: SETGTI0902A	BEFNT		10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11.
05.00 06.00 07.00 01.00 09.00 10.00 11.00 11.00 12.00 13.00	C. C. C. C. C. C. C. C. C. C. C. C. C. C	1.1.10 Set Gr Old Code: GBKEY	ester Than: SETGTI0902A	TATES		10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11.
05.00 05.00 07.00 09.00 10.00 11.00 12.00 13.00 14.00	00000000000000000000000000000000000000	1.1.10 Set Gr Old Code: GBKEY	ester Than: SETGTI0902A	SEFAT SELET SECON		10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11.
05.00 05.00 07.00 09.00 10.00 11.00 12.00 14.00 14.00 15.00	0.000 0.0000 0.000000	1.1.10 Set Gr Old Code: GBKEY	ester Than: SETUTI0902A MOVEL'AS1' MOVEL'GETO1' MOVEL'SETUT'	THREE TOLINE RECORD		10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11.
05.00 05.00 07.00 01.00 09.00 10.00 11.00 12.00 13.00 14.00 15.00 15.00		1.1.10 Set Gr Old Code: GBKEY	ester Than: SETSTI0902A MOVEL'AS1' MOVEL'AS1' MOVEL'SETST' 2-ADD3	BRENUM		10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11.
05.00 05.00 07.00 09.00 11.00 11.00 12.00 13.00 14.00 15.00 15.00 17.00		1.1.10 Set Gr Old Code: GBKEY	ester Than: SETUTI0902A MOVEL'AG1' MOVEL'GETUT' 2-ADD2 CALL 'MP0902'	BRENUM		10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11.
05.00 06.00 07.00 09.00 10.00 11.00 12.00 14.00 15		1.1.10 Set Gr Old Code: GBKEY	eater Than: SETATIO902A MOVEL'AS1' MOVEL'GETOT' 2-ADD2 CALL 'XF0502'	BRENUR		10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11.
05.00 05.00 07.00 03.00 09.00 10.00 11.00 12.00 13.00 14.00 15		1.1.10 Set Gr Old Code: GBKEY	enter Than: SETUTI0902A MOWEL'A61' MOWEL'GENY01' MOWEL'SETUT' 2-ADD3 CALL'NP9502' 	POWEL		10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11
05.00 05.00 07.00 09.00 10.00 11.00 12.00 14.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 12.00 12.00 12.00 12.00 12.00 12.00 12.00 12.00 15		1.1.10 Set Gr. Old Code: GBMEN Bew Code:	eater Than: SETATIO902A MOVEL'AS1' MOVEL'GETOT' 2-ADD2 CALL 'XF0502' FAIM FAIM	BRENUR	5498	10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11. 10.11.
05.00 05.00 07.00 09.00 10.00 11.00 12.00 13.00 14.00 15		1.1.10 Set Gro Old Code: GRMEY New Code: Mew Code:	enter Than: SETGTI0902A MOWEL'AG1' MOWEL'AGIY 2-ADD3 CALL 'NP0902' 	POWEL	5495	10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11
05.00 06.00 07.00 09.00 11.00 11.00 11.00 14.00 14.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 20.00 20.00 21.00 22.00		1.1.10 Set Gro Old Code: GRMEY New Code: Mew Code:	eater Than: SETATIO902A MOVEL'AS1' MOVEL'GETOT' 2-ADD2 CALL 'XF0502' FAIM FAIM	POWEL	5498	10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11
05.00 06.00 07.00 07.00 09.00 10.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 12.00 10		1.1.10 Set Gro Old Code: GBNEY New Code: Mew Code: Selick Selick	enter Than: SETGTI0902A MOWEL'AG1' MOWEL'AGIY 2-ADD3 CALL 'NP0902' 	POWEL	5495	10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11 10.11
05.00 06.00 07.00 09.00 10.00 11.00 11.00 13.00 14.00 15.00 15.00 15.00 15.00 15.00 12.00 20.00 21.00 22.00		1.1.10 Set Gro Old Code: GBMEY New Code: Bew Code: Bew Code: Code Code:	SETUTIO902A MOWEL'AS1' MOWEL'GERTOI' 2-ADD3 CALL 'MEPSO2' FAIM FAIM COMP 'NF' COMP 'NF'	POWEL	5498 54 26	10.11. 10.11.
05:00 06.00 07.00 03.00 10.00 11.00 11.00 13.00 15.00 15.00 15.00 15.00 15.00 12.00 22.00 21.00 23.00 23.00 24.00	C* C* C* C* C* C* C* C* C* C* C* C* C* C	1.1.10 Set Gro Old Code: GBMEY New Code: Bew Code: Bew Code: Code Code:	enter Than: SETGTI0902A MOWEL'AG1' MOWEL'AGIY 2-ADD3 CALL 'NP0902' 	POWEL	5495	10.11. 10.11.
05.00 06.00 07.00 03.00 10.00 11.00 11.00 13.00 14.00 15.00 15.00 15.00 15.00 15.00 12.00 20.00 21.00 22.00 23.00 24.00 25.00	C* C* C* CSR CSR CSR CSR CSR CSR CSR CSR CSR CSR	1.1.10 Set Gro Old Code: GBNEY Hew Code: Bew Code: SEIOR SEIOR Old Code: "HIVAL	SETUTIO902A MOWEL'AS1' MOWEL'GERTOI' 2-ADD3 CALL 'MEPSO2' FAIM FAIM COMP 'NF' COMP 'NF'	POWEL	5498 54 26	10.11. 10.11.
05.00 06.00 07.00 09.00 10.00 11.00 11.00 14.00 14.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 15.00 20.00 20.00 20.00 20.00	C* C* C* CSR CSR CSR CSR CSR CSR CSR CSR CSR CSR	1.1.10 Set Gro Old Code: GBMEY New Code: Bew Code: Bew Code: Code Code:	SETUTIO902A MOWEL'AS1' MOWEL'GERTOI' 2-ADD3 CALL 'MEPSO2' FAIM FAIM COMP 'NF' COMP 'NF'	POMP1 TOP02	5498 54 26	10.11. 10.11.
05.00 06.00 07.00 03.00 10.00 12.00 13.00 14.00 14.00 15.00 17.00 17.00 13.00 20.00 22.00 23.00 23.00 24.00 25.00	C* C* C* CSR CSR CSR CSR CSR CSR CSR CSR CSR CSR	1.1.10 Set Gro Old Code: GBNEY Hew Code: Bew Code: SEIOR SEIOR Old Code: "HIVAL	enter Than: SETGTI0902A MOWEL'AS1' MOWEL'AS1' MOWEL'AS1' MOWEL'AS1' CALL 'NEPSO2' CALL 'NEPSO2' FAIM FAIM FAIM COMP 'ERE' SETGTI0902A MOWEL'AS1'	BRENUM FORBEL IOSO2	5498 54 26	10.11. 10.11.
05.00 05.00 07.00 03.00 10.00 11.00 11.00 11.00 11.00 11.00 11.00 12.00 13.00 10		1.1.10 Set Gro Old Code: GBNEY Hew Code: Bew Code: SEIOR SEIOR Old Code: "HIVAL	ester Then: SETUTIO902A MOVEL A61' MOVEL GETOT' 2-ADD CALL 'XPD902' CALL 'XPD902' FAIM RAIM COMP 'NP' COMP 'NP' COMP 'NP' MOVEL A61' MOVEL A61' MOVEL A61'	BEFMT BEFMT BEFMT	5498 54 26	10.11. 10.11.
05.00 05.00 07.00 02.00 10.00 11.00 11.00 12.00 14.00 14.00 15.00 15.00 15.00 20.00 21.00 22.00 23.00 25	C* C* CSR CSR CSR CSR CSR CSR CSR CSR CSR CSR	1.1.10 Set Gro Old Code: GBNEY Hew Code: Bew Code: SEIOR SEIOR Old Code: "HIVAL	enter Than: SETGTI0902A MOWEL'AS1' MOWEL'AS1' MOWEL'AS1' MOWEL'AS1' CALL 'NEPSO2' CALL 'NEPSO2' FAIM FAIM FAIM COMP 'ERE' SETGTI0902A MOWEL'AS1'	BEFMT BEFMT BEFMT	5498 54 26	10.11 10
05.00 05.00 07.00 03.00 10.00 10.00 11.00 11.00 11.00 11.00 11.00 12.00 13.00 14.00 15.00 15.00 15.00 20.00 20.00 22.00 22.00 22.00 23.00 24.00 25		1.1.10 Set Gro Old Code: GBNEY Hew Code: Bew Code: SEIOR SEIOR Old Code: "HIVAL	enter Than: SETGTI0902A MOWEL'AS1' MOWEL'AS1' MOWEL'ASTGT' 2-ADD3 CALL 'NEPSO2' 	BARNUM PSIME1 IOS02 BARNIT BARNAT BARNAT	5498 54 26	10.11. 10.11.
05.00 05.00 01.00 01.00 01.00 10.00 11.00 11.00 11.00 11.00 11.00 11.00 11.00 12	C* C* C* C* CSR CSR CSR CSR CSR CSR CSR CSR CSR CSR	1.1.10 Set Gro Old Code: GBNEY Hew Code: Bew Code: SEIOR SEIOR Old Code: "HIVAL	SETUTIO902A MOWEL'AS1' MOWEL'GENTO' 2-ADD3 CALL 'MD902' FAIM FAIM COMP 'MF' COMP 'MF' COMP 'MF' SETUTIO902A MOWEL'GENTO1' MOWEL'GENTO1 MOWEL'SETEE CALL 'MD902'	BARNUM PSIME1 IOS02 BARNIT BARNAT BARNAT	5498 54 26	10.11. 10.11.
05.00 05.00 07.00 00.00 10.00 10.00 11.00 11.00 11.00 11.00 12.00 13.00 14.00 13.00 13.00 13.00 20.00 21.00 22.00 23.00 20	C* C* C* CSR CSR CSR CSR CSR CSR CSR CSR CSR CSR	1.1.10 Set Gro Old Code: GBNEY Hew Code: Bew Code: SEIOR SEIOR Old Code: "HIVAL	MOWEL'AG1' MOWEL'AG1' MOWEL'GERYD1' MOWEL'GERYD1' MOWEL'GERYD1' CALL 'NFD902' FAIM COMP 'ERR' COMP 'ERR' COMP 'ERR' SEFTGTI0902A MOWEL'AG1' MOWEL'GERYD1' MOWEL'GERYD1'	Barren Franzi 10902 Barren Barren Barren Barren Barren	5498 54 26	10.11. 10.11.
05.00 07.00 01.00 02.00 10.00 11.00 11.00 11.00 12.00 14.00 14.00 14.00 14.00 12.00 12.00 12.00 21.00 21.00 22.00 23.00 25.00 25.00 25.00 25.00 25.00 23.00 23.00 23.00	C* C* C* C* CSR CSR CSR CSR CSR CSR CSR CSR CSR CSR	1.1.10 Set Gro Old Code: GBNEY Hew Code: Bew Code: SEIOR SEIOR Old Code: "HIVAL	ester Then: SETUTI0902A MOVEL'AS1' MOVEL'AS1' MOVEL'AS1' CALL 'MP0902' -AND PAIM PAIM PAIM COMP 'NF' COMP 'NF' COMP 'NF' COMP 'SER' SETUTI0902A MOVEL'AS1' MOVEL'AS1' MOVEL'SETUR' CALL 'MU902' 	BEFRU FORE1 IOSO2 BEFRU	5498 54 26	10.11. 10.11.
05.00 05.00 07.00 00.00 10.00 10.00 11.00 11.00 11.00 11.00 12.00 13.00 14.00 15.00 13.00 20.00 21.00 22.00 23.00 25	C* C* C* CSE CSE CSE CSE CSE CSE CSE CSE CSE CSE	1.1.10 Set Gro Old Code: GRMEY New Code: estor Old Code: "HIVAL New Code:	MOWEL'AG1' MOWEL'AG1' MOWEL'AG1' MOWEL'AGENY01' MOWEL'AGENY01' CALL'AND'SO2' BAIM COMP 'BR' COMP 'BR' COMP 'BR' COMP 'BR' MOWEL'AG1' MOWEL'AG1' MOWEL'AG1' MOWEL'AG1' MOWEL'AG1' MOWEL'AG1' MOWEL'AG1' MOWEL'AG1' MOWEL'AG1'	Barren Franzi 10902 Barren Barren Barren Barren Barren	5495 54 95	10.11. 10.11.
05.00 05.00 07.00 09.00 10.00 11.00 11.00 11.00 12.00 13.00 14.00 15.00 15.00 15.00 12.00 12.00 12.00 12.00 12.00 13	C* C* C* C* CSR C* CSR CSR CSR CSR CSR CSR CSR C* CSR C* CSR CSR C* CSR C* CSR C* CSR C* CSR C* CSR C* CSR C* CSR C* C* CSR C* C* C* CSR C* C* C* C* C* C* C* C* C* C* C* C* C*	1.1.10 Set Gro Old Code: GBNEY Hew Code: BEIOR Old Code: "HIVAL New Code: SEIOR	AND A CARL AND A CARL	BEFRU FORE1 IOSO2 BEFRU	5498 54 26	10.11. 10.11.
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Figure 26–5 File Server Example (part 3)

1000	10.000		25000.000000000000000000000000000000000	 100 (815)1 		23.32510.5
.00	CER		MDVEL GETILL.	GEOPER		10.11
.00	CER		z-andl	SCHOOL ON		10.11
00	CER		CALL 'XF0101'			10.11
00	C.					10.11
00	CER		PARM	0.9861		10.11
00	CER		PARM	10101		10.11
00	CGR	BOIDS	COMP 'BOF'		84	10.11
00	CSR	BOIGS	COMP 'EQ'		85	10.11
00	CER	SOLES	COMP 'SRE'		99	10.11
00	C*	Sec. Sec.				10.11
00	C*	old Code:				10.11
00	CER	*LOVAL	SETLLIG101C		99	10.11
00	a"	- DOWNED	SETTEMOTORC		**	10.11
00	č.	New Code :				10.11
		DRAM CODE :	2 12 12 12 12 12 12 12 12 12 12 12 12 12	000000-01		
00	CER		MOVIL'AS1'	COLUMN		10.11
00	CER		MONEL. WERAD3.			10.11
00	CER		MOAET, BELTA,	GEOPER		10.11
0.0	CER		CALL'XF0101'			10.11
10	C*					10.11
0	CER		PARM	9.9381		10.11
10	CER		PARM	10101		10.11
00	CER	NOIGS	COMP 'ERCR'	(A. 1997) (A. 1997)	22	10.11
00	C*				57.00	10.11
00	5					10.11
00	C	1.1.12 Update:				10.11
00	C.	and the second				10.11
00	C*	old Code:				10.11
0.0	CER		UPDATIO902A		99	10.11
00	C*					10.11
00	C*	New Code :				10.11
00	CER		MOVEL'AS1'	COPME		10.11
0.0	CER		MDVEL'BEKY01'	GONLOT.		10.11
00	CER		HOVEL' OFDAT'	GEOFER		10.11
00	CER		CALL 'XF0902'	STR. PER		10.11
	Cart		CALL · LYOSU2·			
00						10.11
0.0	CER		PARM	95381		10.11
0.0	CER		PARM	10902		10.11
00	CER	00108	COMP 'ERE'		99	10.11
00	C.					10.11
0.0	C*	old Code:				10.11
0	C*		Read			10.11
0.0	C*		Unlock			10.11
10	C*		Chain		82	10.11
10	C*				3 .	10.11
			HERATTOON 28			
10	CER		UPDATIO902A		99	10.11
0	C*	1000000-000 - 000-00000				10.11
0.0	C*	New Code :				10.11
0.0	C*		Read with no lo	ock		10.11
00	C*					10.11
0.0	CER		HOVEL'AS1'	COUNT		10.11
0.0	CER		MOVEL'GEKY01			10.11
00	CER		HOVEL . OPDTC .	GEOPER.		10.11
00	CER		Z-AD04	02032309		10.11
10	CER		CALL 'XF0902'	a a state of a		10.11
00	C*					10.11
00	CER		PARM	P.5381		10.11
0.0	CER	22036230140	PARM	10902	122	10.11
00	CSR	saice	COMP 'MP'		82	10.11
00	CSR	NOISS	COMP 'ERE'		99	10.11
0.0	C*					10.11
0.0	C*					09.11
00	C*	1.1.11 Write:				10.11
00	C*					09.11
0.0	C*	old Code:				09.11
0.0	CER	2020 200 2020 2020	WRITEIO101K		22	10.11
00	C*				50 C	09.11
30	C*	New Code :				09.11
	CER	new Code :	and the second s	COPPER T		
00			HDVEL'AS1'			10.11
0.0	CER		MDALT, YEKAII.			10.11
0	CER		MDAET. MELLE.	COOPER.		10.11
10	CER		CALL 'XF0101'			10.11
0.0	C*					09.11
00	CER		PARM	9.9361		09.11
00	CER		PARM	10101		10.11
00	CER	SOLOR	CONP 'ERE'	2000	82	10.11
10	CSR C*	earos				10.11
00						
0.0	C.					09.11
10		1.1.14 Unlock:				10.11
	C*					09.11
	C*	old Code:				09.11
			EECPTURILOCK			10.11.
00	CER					
00			:			10.11.
00 00 00 00 00	CER.	A E				10.11.

Figure 26–6 File Server Example (part 4)

c*						09.11.
C*	Ne	w Code:				09.11.
COR			MOVEL'AGL'	CHERT		10.11.
CGR			MOVEL'ABKYOl'	GentL97		10.11.
CGR			MOWEL'UNICE'	GBOPER.		10.11.
CER			CALL 'XF0101'			09.11.
C*						09.11.
COR			PARM	PGMM1		09.11.
CER			PARE	10101		10.11.
CER		BUIGH	COMP 'ERR'		99	10.11.
C*						09.11.
C*						10.11.
C.*	2.1.1	xopos1:				19.01.
C*						19.01.
CER			CALL 'X09031'			19.01.
C*			union accord			19.01.
CER			PARM 121	HCALC 1		19.01.
CER			FARM	HCO 5		19.01.
CER			FRAM	HDG 60		19.01.
CER			FARM	HEN 20		19.01.
CER			FARM	HPY 20		19.01.
CER			FARM	HCTT 20		19.01.
CER			PRAM	HEDT 1		19.01.
COR			FARM '1'	HDGFY 1		19.01.
C*			Prices +			19.01.
C*						19.01.
C*						19.01.
C*	10112-02	1001007-010				
C*	2.2.1	X0901:				19.01.
CER			CALL 'X0901'			19.01.
CSR.			CALL . X0901.			19.01.
			PARM '1'	1000		
CER				PREM 1 PROMOD 1		19.01.
			FARM RPAN			19.01.
CER			PARM '1'	PSIMOD 1		19.01.
CER			PARM RPGLEA	PEANI 29		19.01.
CGR			PARM *BLAME	PSNCU 12		19.01.
CGE			FARM *BLARK	PEOBJ 6		19.01.
CER			PARM *BLANK	Pague a		19.01.
COR			PARM	PGERM 4		19.01.
C*	633.013 Y SC	2.793933223			- 1993 - 1997 I. 1997 I. 1997 I. 1997 I. 1997 I. 1997 I. 1997 I. 1997 I. 1997 I. 1997 I. 1997 I. 1997 I. 1997 I	19.01.
C						19.01.
C*	152823	10012-014-02				19.01.
C.	2.3.1	X0006:				19.01.
C.			0424203422722225			19.01.
CER			CHIT . X0000.			19.01.
C.					0.0000000000000000000000000000000000000	19.01.
CGR			FARM 'I'	PSOMOD 1	output mode	19.01.
CSE			PARM	PSIMOD 1	input mode	19.01.
CER			PARM SPHCU	PSMCU 12	cost center	19.01.
CGR			FAIM	PERENN 4	error flag	19.01.
CGR			FAIM	10005	F0006 record	19.01.
C*						19.01.

Figure 26–7 File Server Example (part 5)

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.

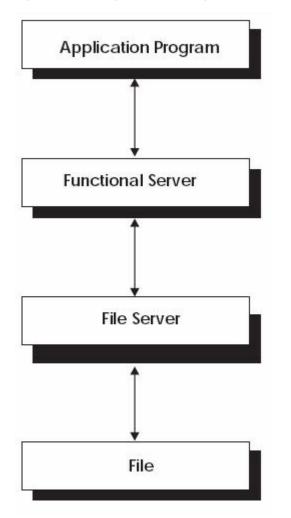
Functional servers have the following naming convention:

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



the flow of a typical program 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:

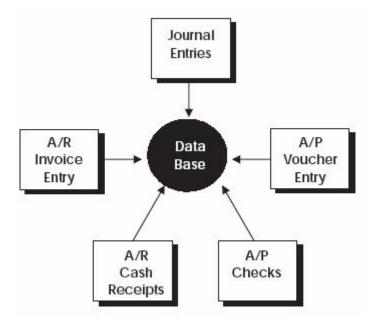
- Provides all editing for a transaction
- Provides field default values
- Provides all database updates
- Performs inquiry for an entire transaction
- Runs interactively or in batch
- Supports a multitude of user interfaces

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.

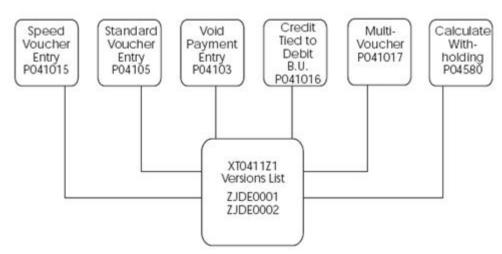
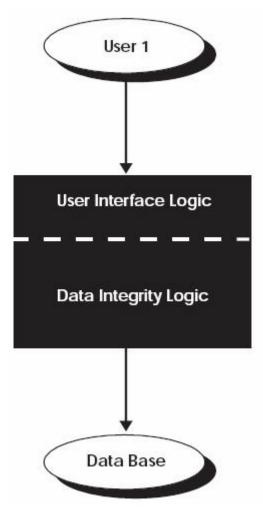


Figure 27–3 Programs That Use the Voucher Processing Functional Server

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

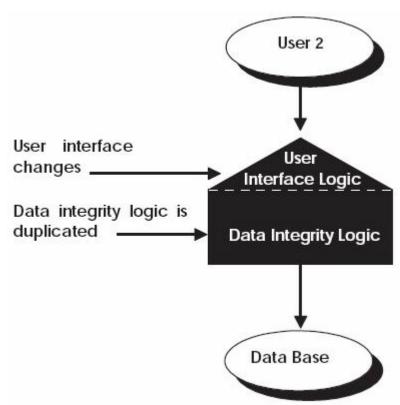
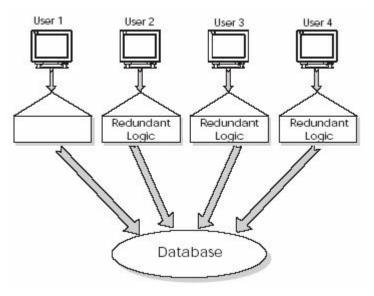


Figure 27–5 Traditional Architecture - Alternative Method of Entry

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





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

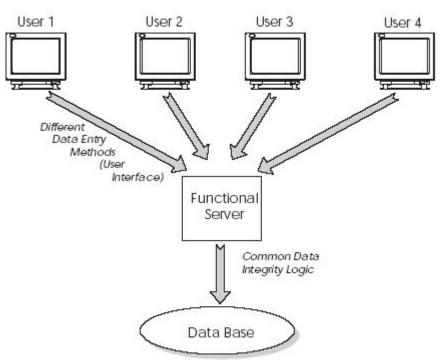


Figure 27–7 Open Application Architecture Concept

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

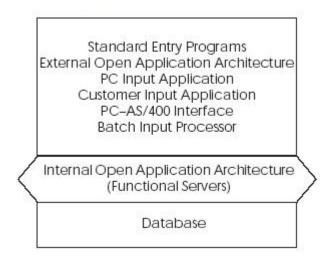


Figure 27–8 Open Application Architecture

27.7.10 Functional Server Interface

A functional server must handle two basic components:

- Data
- Error messages

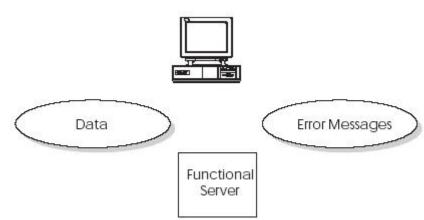


Figure 27–9 Functional Server Components

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)

```
g
E* Copy Composite Member for Functional Server
g
E/COPY JDECFY,E00F640
g
```

Copy module containing generic data structures for functional server.

Figure 27–11 Functional Server Program Sections (part 2)

I/COPY JDECPY, IO0XPSRV

Contains control parameter list for file servers



I/COPY JDECPY, 1010161

Contains record image of F0101 version A6.1 for file servers.

Figure 27–13 Functional Server Program Sections (part 4)

CLEARFSee MOVEL\$SVCO KYee CALL 'XS0010' 81 PARM PSee PARM DS0010

Call to file server XS0010 to retrieve company currency code.

Figure 27–14 Functional Server Program Sections (part 5)

*IN91 RTwe	IFDQ '0' ANDEQ' ' MOVE *BLANKS MOVELCOCRCD CALL 'XS0013'	PS90 XY90	91
	PARM	PSee	
DS0013 RTee	PARM DE0013 IFNE 'N'	PS0013	
CVCDEC	ANDNE*BLANK MOVE CVCDEC ENDIP ENDIP	\$CDO	

Call to file server XS0013 to retrieve display decimals.

Figure 27–15 Functional Server Program Sections (part 6)

	MOVEL'A61' MOVEL'ABNY01' MOVEL'CHAIN' MOVEL'CHAIN' Z-ADD1 CALL 'XF0101'	GOKLST GOOPER GOLOCK GOLOCK GOLOCK	
BUIOR	PARM PARM COMP 'NF'	PSeel I0101	81

Call to file server XF0101 to retrieve record

ealor COMP 'ERR' 98	*IN81	IPEQ '0' ADD S#FC MOVEL'AGI' MOVEL'ABKYOI' MOVEL'UPDAT' CALL 'XF0101' PARM	ABAFCY BOFMT GONLST GOOPER PS001		Call to file server XF0101 to update record
	BOIOR		10101	98	apane record

Figure 27–16 Functional Server Program Sections (part 7)

ate record

Figure 27–17 Functional Server Program Sections (part 8)

	MOVE &GLDCT MOVE SSVRCO Z-ADD&GLDCC Z-ADD&GLICU MOVE &GLICT MOVE *BLANK	WARDCT WARKCO WARDOC WARICU WARICT WARSPL	
Load function	onal server parms	for edit/update.	10
	MOVELAXIDXN MOVELASPAR MOVELABJ11 Z-ADD1 Z-ADD3MARBG MOVE AHIGNW MOVE AHOFF MOVE AHOFF MOVE AHPROG MOVE AHPROG MOVE AHPROG Z-ADD3ARSL Z-ADD3ARSL Z-ADD3ARSL Z-ADD3ARSL Z-ADD3ARSL Z-ADD3ARSL	#PIDXN #PSPEC #PFUNC #FVERS #FNERL #FSPCE #FNRRN #PLVL #PDFTC #PPROG #FXATP #PSPCL #PSPCL #PSPCL #PFLDS #PFMT	index name applicatio function DW version number of lines space offset warning handler default on chg program name type space name space length number of field format name
	CALL XT0311Z	a' 6	91
	PARM PARM	#PPARM CARN	

Call functional server XT0311Z1

Current user	MOVEL#SUGL	ASSPCD	
Current user	space offset		
	Z-ADD\$#GLDG	ASPOOP	
Set update fl	ag		
	MOVE SHOFP	ASPCUP	
General Ledge	r record		
	MOVEAGL01	4#SSPC	
Application s	pecific line dat	a	
	MOVELASSGL	ASPCAP	
Write record	to user space		
	CALL 'X99CHGD		Hedit

Figure 27–18 Functional Server Program Sections (part 9)

Write records to user space for functional server.

MOVE *ZERO MOVE 'RF' MOVE SSVKCO Z-ADD\$GLDG Z-ADD\$GLDG# IFEQ	#GLDOC #GLDCT #GLKCO #GLDG #GLDG#	Docu	to-One Rel ment Type ment Co.	
MOVE \$SVKCO Z-ADD\$GLDG Z-ADD\$GLDG# IPEQ	#GLKCO #GLDG	Docu G/L	ment Co.	
Z-ADD\$GLDG Z-ADD\$GLDG# IFEQ	#GLDG	G/L		
Z-ADD\$GLDG# IFEQ	#GLDG#		Date	
		G/L G/L	Date	
	1. COL 1. COLU	Tet.	b. When he are	
Z-ADD* ZERO ELSE	#GLICU	Bacc	h Number	
Z-ADD\$ICU	#GLICU	Bate	h Number	
MOVE 'I'		Batc	n Type	
MOVE *RLANKS	#GLMOD	add	a Model	
MOVE *BLANKS	#GLIMD	Chan	ge a Model	
MOVE *BLANKS	#GLRD I	Redi	stribute JE	
MOVE ARESN	MCALCINE.	A/R	Spc Name	
MOVE 4#AR1	#GLCFM	A/R	Spc Fmt	
MOVE PARSL	#GLCLN	A/R	spe Length	
MOVE #2ERO	IGLCD		- 0-mail:	
MOVE ABON	NGLONE	One-	to-One Rel	10 D2025 C
		200000	0.0000000000000000000000000000000000000	Call functional server
				XT0911Z1
Parmar - WT001	171 - 5415	and Indate		102
		and opuace	5	
server parms f	or edit and	update		
NOVE SGACTN	# PETINIC	act 1	on Code	
MOVEL\$#911	# FVERS			
MOVE AGLSN	#PSPCN	space	e name	
Z-ADD\$#GLBG	#PSPCB	space	e offset	
Z-ADD1	# PNBRL			
Z-SDD#ZERO	# PWARD	warn Exch	ande Rate	
MOVE BAOFF				
MOVE #40FF		deta	ult on chg	
MOVE 'INV'	#PXATP	type		
MOVE ##OFF	#PLVL	deta	11 level	
		nump	er of fleid	
MOVELA#GL1		form	at name	
MOVE *BLANKS	#P#MDE	mode	of entry	
MOVE *BLANKS	#PCRCD	curr	ency code	
MOVE *BLANKS	# PCRR	exch	ange rate	
MOVELAXIDXN	PIDXN	inde	x name	
MOUPLACED.	#PSPCL	appac	teation par	
encertheautrescon		1985	reaction par	
	Conception and	91		
PARM	#PPARM			
PARM	@GLN			
	ENDIF MOVE 'I' MOVE SSVOO MOVE *ELANKS MOVE *ELANKS MOVE *ELANKS MOVE ABARSN MOVE ABARSN MOVE ABARSN MOVE ABARSN MOVE ABARSN MOVE ABARSN MOVE ABOPF MOVE ABOPF MOVE SGACTN MOVESSES MOVE SGACTN MOVESSES MOVE SGACTN MOVESSES MOVE ABOPF MOVE SGACTN MOVE AGLES Z-ADDSGGLBG Z-ADDSGGL MOVE *ELANKS MOVE *ELANKS	ENDIF MOVE 'I' HCLICT MOVE 'SLANKS HCLAD MOVE 'BLANKS HCLAD MOVE 'BLANKS HCLAD MOVE 'BLANKS HCLAD MOVE ABARN HCLCSN MOVE SGACTN HFFUNC MOVE SGACTN HFFUNC M	ENDIF HOVE 'I' HCLICT Batc HOVE SSVCO HCLCO Comp HOVE *BLANKS HCLKOD Add MOVE *BLANKS HCLKOD Add MOVE *BLANKS HCLKOD Add MOVE *BLANKS HCLKOD Chan MOVE *BLANKS HCLKON A/R MOVE #ARSI HCLCSN A/R MOVE \$GACTN HFFUNC Acti MOVE \$GACTN HFFUNC MOVE \$GACTN HFFUNC ACTI MOVE \$GACTN HFFUNC ACTI MOVE \$GACTN HFFUNC ACTI MOVE \$GACTN HFFUNC ACTI MOVE \$GACTN HFFUNC MOVE \$GAC	ENDIF MOVE 'I' #GLICT Batch Type Company MOVE 'SSYCO #GLCO MOVE *BLANKS #GLMOD Add a Model MOVE *BLANKS #GLMOD Add a Model MOVE *BLANKS #GLMOD Change a Model MOVE *BLANKS #GLMOD AdK a Model MOVE *BLANKS #GLKDI Redistribute JE MOVE #ARSN #GLCSH A/R Spc Name MOVE #ARSN #GLCDI A/R Spc Name MOVE #ARSN #GLCDI MOVE #ARSN #GLCDI MOVE #ARSN #GLCDI MOVE #ARSN #GLCDI MOVE #ARSN #GLCDI MOVE #ARSN #GLCDI MOVE #GLCD MOVE #GLCD MOVE #GLCD MOVE #GLSH #GLCDI MOVE \$GLCD MOVE \$

Figure 27–19 Functional Server Program Sections (part 10)



User space	description		
	MOVEL#SUAR	#SSPCD	
Current us	er space offset		
	Z-ADD\$#ARBG	#SPCOP	
Read recor	d from user space		
	CALL 'QUERTVU	S'#PRTUS	91

Retrieve record from user space.

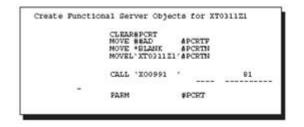
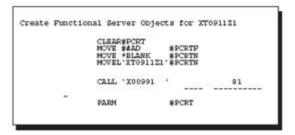


Figure 27–21 Functional Server Program Sections (part 12)

Create user space and user index for XT0311Z1.

Figure 27–22 Functional Server Program Sections (part 13)



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, ADDBKP 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	Repositor	Y		
P Library	. <u>RPG</u> . <u>111</u> . <u>01</u> em <u>01</u> me <u>P0105</u> . <u>0</u> . <u>0</u>	Book Infor RPG Programs Pile Maint Address Bool Address Bool Information Address Bool Mit Option. otional Pile. M Writer Por Source Pile	Fenance C F F M C T E Xists SAR Number	ile Prefix eneration ommon Pile Version ID A71	Sev .	N User ID DM904413	Date <u>Modified</u> 07/20/95

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: Source Pile: Library: .			P01051 Name JDESEC Name, *OBJEC JDESEC Name	T, *SPLP
F3=Exit F4= F13=How to us	Prompt e this	PS=Refresh display	P10=Additional parameters F24=More keys	Bottom F12=Cancel

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 Scan:		JDE Visual Debug	JDESRC	JDFSRC P01051
e van i	Current Breakpoint: /000]	1	IN MORE HAR	
01.00	H/TITLE P01051 - 2		Who	
02.00	H*			
03.00	H*			
04.00	H* Copyright (c) 1	1985,1986		
05.00	H* J. D. Edwards (6 Company		
06.00	H*	안정 전 이 전 소리는 방송을 가지?		
07.00	H* This unpubl	lished material is p	proprietary to	
08.00	H* J. D. Edwar H* The methods	rds & Company. All	rights reserve	d.
09.00	H* The methods	s and techniques dea		
10.00		trade secrets and/o		
11.00	H* Reproductio	on or distribution,	in whole or in	part,
12.00		en except by express	s written permi	ssion.
13.00	H* of J. D. Ed	fwards & Company.		
14.00	H*			
15.00	H*			
16.00	H*			
17.00	P* P* PROGRAM REVISIO			
18.00	F* PROGRAM REVISIO	ON LOG		
F2=J	DE Command Line F5=ADDBKP	F6=ADDBKP w/prompt	F7=DSPPGMVAR	2
F8=C	HGPGMVAR F13=Display Indic	cators 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:	<u>J928400</u> <u>JDESEC</u> JDESEC	Name Name, *OBJECT, *SPLF Name
P3=Exit P4=Prompt P5= P13=Row to use this displ	Refresh Pl0=Additional ay P24=More keys	parameters P12=Cancel

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:	<u>P928400</u> Name <u>JDESEC</u> Name, *OBJECT, *SPLP <u>JDFSEC</u> Name	
F3=Exit F4=Frompt F5=Refresh F13=How to use this display	B P10=Additional parameters P12=Cancel P24=More keys	ottom

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 Scan		JDE Visua	1 Debug	JDESRC	JDFSRC J928401
	Current Breakpoint	/0001	500 - 10 / c 10 - 10	0.0000000000000000000000000000000000000	
0001.00	/************************				
0002.00	/* Program	7020101			
0004.00	/. Program	+ + + 035940T			
0005.00		Inventory	by Cost Cer	nter	
0006,00	/.		-1		
0007.00	/* Program Revisio	n Log			
0008.00	/				
0009.00	/* Date	Francis de la companya de la	The second se	and an	
0010.00	/* Date	Programmer	Descrip	ption	101214-022122
0012.00	/* 11/10/93	PB908300	SAR # 0030	(5505	
0013.00	/.	1000000			
0014.00	/*********************	************	**********		
0015,00	J928401; PGM	(&PSPID &PSVE	RS)		
0016.00	/* Define		And manufact	1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 -	
0018.00	/. Deline	brodram rite (s	y and varia	ore(a)	
00.0	DR dommand Films Dr.		with an Amazona an	DO DODDODIDI	
P8-C	DE Command Line PS: HGPGMVAR P13=Displa	v Indicators	16/15-Scan	Pwd/Rkwd P24	More
1010	internet transfer	d suproporte t	work workshould be	and provide a series	

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

044.00 / 045.00 / 046.00 / 047.00			001 rinter files t		12.5	
045.00 / 046.00 / 047.00		Override P	rinter files t			
47.00				o one spool f	11e	:
048.00	0	OVRPRTP OVRPRTP OVRPRTP	FILE(R98COVER FILE(R98RPTH FILE(R928401)) TOFILE (R9)	28401) SHA	RE(*YES) RE(*YES) RE(*YES)
050.00 / 051.00 / 052.00 /		Retrieve j	ob name and su	bmitting meas	age queue.	
053.00 054.00 055.00 055.00	1	RTVJOBA IF SNDPGMMSG	MSGID (JDE9991	='1') THEN (DO) 3) +	OBTYPE)

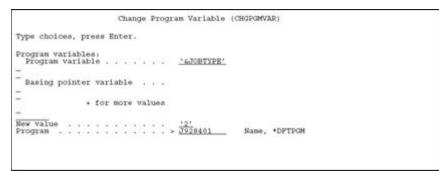
- 2. Press F5 anywhere on the line containing &JOBTYPE to set the breakpoint.
 - The line is highlighted, indicating that a breakpoint has been set on that line.

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



- **3.** Complete the Change Program Variable form and press enter. The value of &JOBTYPE is now changed to your specified value.
- 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.

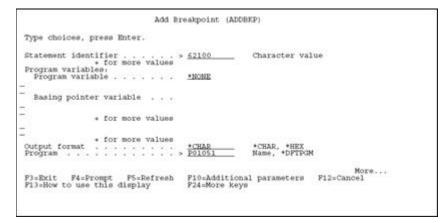
Example F5

Figure 28–9 Example F5

93701 Scan:			JDE Visual D	ebug J	DESRC	JDFSRC P01051
a carri	Current	Breakpoint: /00	01			501001
0319.00	C.	eremperier ; ; ;	00			
0320.00	č	SAUTO	CASEO'1'	\$003	24	
0321.00	C*				1.575	
0322.00	Ċ		END			
0323.00	C*					
0324.00	C*	Begin normal	program proce	seing.		
0325.00	C*					
0326.00	C*					
0327.00	C	*INLR	DOMED, 0,			
0328.00	C*					
0329.00	C*	If subfile pa	ige display no	t set, set sub	file page	display.
0330.00	C*					
0331.00	C	#SFRNO	IFLE 0	101010101010		
0332.00	C		Z~ADD1	#SFRNO		
0333.00	C		END			
0334.00	ບັບບໍ່ນີ້ບໍ່ບໍ່ບໍ່ບໍ່ບໍ່ນີ້ນັ້ນບບບບໍ່ນີ້ນັ້					
0335.00	C*	Write video :				
0336.00	.C.	@\$MBMO det	ermines which	format is wri	ccen:	

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



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

						D	is	p1.	aγ	Pı	00	jr a	8	Variables
Program . Recursion Start pos Format . Length .	ition		1	ŧ.,		1.4	:	-	*	1			1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	P01051 1 *CHAR *DCL
Variable Type Length 			÷	+				-	+	+	-	•••••		*IN99 CHARACTER 1 15
Variable Type Length **.	111	•	12.1	4	2.52			4.			÷		۰.	*IN93 CHARACTER 1
Press Ente	r to c	ont	in	rue	•									
F3=Exit	F12=Ca	1.6												

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

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		9 001051 1 1 * CHAR * DCL
Variable	Value	(1.99) CHARACTER
Element 1 '0' '0' 21 '0' '0' 31 '0' '0' 31 '0' '0' 51 '0' '0'	· · · · · · · · · · · · · · · · · · ·	
Press Enter to continue	1	
P3=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: About software scan and replace

- 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

8810	Softwar	re Scan & Replace	
System code Function code Specific object. File ID Source library . Scan argument:	RPG JDESRC	(Generic = *) (Defaults to source	(Blank = all) (Blank = all) (Blank = all))) libr in member master)
100SC (If search arg		mbedded blanks enclo	ose argument with >.}
Replacement argu	ment:		
IOORSC		blanks enclose argu	ment with >.)
IOORSC (If argument c	ontains imbedded	blanks enclose argu lumn End	
IOORSC (If argument o Column replaceme	ontains imbedded	lumn End	

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

98810			Bdwards & Com Software So			4/01/93
System	55					
Function	RPG					
object:						
File:	JDESRC					
Source Lib:	DEVSRC					
Argument:	*1008C*					
Replace By:	"IOORSC"					
column End:	000					
Column End:	000					
Allow Ovrf:						
Insert Frm-	File:	Libr	Memb r			
Action	Replacement	Scan/Replace	characters=	05/06		
5501G	- Item Mainten:	ance - Gregg		1.0t	Occurrence a	t 010200
5501X	- Item Mainten:	ince		lot	occurrence a	t 010200
55011X	- Item Informat	tion Update		1.0t	occurrence a	t 009200

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 that 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 DSPDBR 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 Library List	:::	:::::	TEACH OTEMP JDFOBJ COMMON PRODDATA JDFSRC OGPL
User Security: User Key Initial Menu to Initial Program Menu Level User Type User Class/Group . Batch Job Queue Job Scheduling Pric Logging(level/sever Output Queue Optional Printer Fi Current Library Employee Address Nu	b Exect to E: 	Ate	A Allow Menu Traveling (Y/N) Y Allow Past Path (Y/N) Y TEACHER OBATCH 5 5 4 00 *NOLIST P4B

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	c	J.D. Edwards & Company Meneral Business Systems	
2. 3. 4. 5. 9. 10. 11.	GENERAL BUSINESS SYSTE Address Book General Accounting Accounts Payable Accounts Receivable Financial Reporting Modeling & Allocatio Fixed Asset Payroll Human Resources Electronic Mail	98GRPGroup QDescription 	JobsE <u>Group Job Status</u> GROUPO1 Active
		Cmd/HS: Opt: 4=Sel 9=End F3=E	xit F4=Prompt F5=New Job

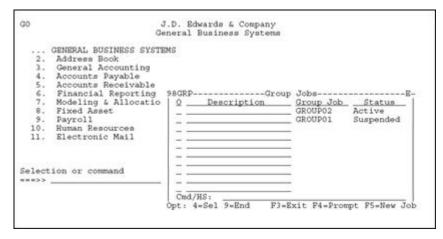
32.3 Creating New Group Jobs

To create new group jobs

1. Press F5 on the Group Jobs window for New Job.

2. 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



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

	.D. Edwards & Company neral Business Systems		
GENERAL BUSINESS SYSTE Address Book General Accounting Accounts Payable Accounts Receivable Financial Reporting Modeling & Allocatio Fixed Asset Payroll Human Resources Electronic Mail Selection or command	MS 98GRPGroup Q A 	p Jobs Group Job GROUP02 GROUP01	

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

G0		.D. Edwards & Company neral Business Systems		
	Fixed Asset Payroll Human Resources	MS 98GRPGroup 9 98GRPGroup 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9 9	Jobs Group Job GROUP01 GROUP02	
		Cmd/HS: Opt: 4=Sel 9=End F3=E	xit F4=Prom	pt F5=New Jo

32.6 Changing to Non-Group Mode

To change to non-group mode

Enter option 9 beside all active and suspended group jobs.



GO	J.D. Edwards & Company General Business Systems	
2. 3. 4. 5. 6. 7. 8. 9. 10.	GENERAL BUSINESS SYSTEMS Address Book General Accounting Accounts Payable Accounts Receivable Financial Reporting 98GRPGroup Modeling & Allocatio Fixed Asset Payroll Human Resources Electronic Mail	p Joba

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 Ente	f11 .	
Libraries for current jo	<pre>> TCA3020RJ > JDFORJ > TCA302DTA > A3SHARE > TRNSHARE > TCA302SRC > JDFSRC > JDFSRC > VAPAY2JLIB > VCPAY2JLIB > VCPAY2JLIB > VCPAY2JLIB > VPAYLIB > OFRT5225</pre>	Name, *SAME, *NONE
	re values > <u>OGPL</u>	Name, *SAME, *CRTDFT
ottom FJ=Exit F4=Prompt F5=Re F24=More keys	fresh F12=Cancel F	'l]=How to use this display

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

Type cho	ices, press	Enter.			
Librar			*LIBL	Name, *LIBL	. •CURLIB
	+ fo	r more values	-		

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).



0092	User Infor	mation	Action Code I
User ID		TEACH	
Library List	101 1010	OTEMP JDFOBJ C	OMMON PRODDATA JDFSRC OGPL
User Security: User Key Initial Menu to & Initial Program t Menu Level User Type User Class/Group . Batch Job Queue Job Scheduling Priori Logging(level/severit Cutput Queue Optional Printer File Current Library Employee Address Numb Set Attention Program F6-Display/Lang Pref	ty bibrary. (PPAT)	A1 A1 A1 A1 A1 A1 A1 A1 A1 A1 A1 A1 A1 A	low Command Entry (Y/N). Y low Menu Traveling (Y/N) Y low Fast Path (Y/N) Y ST

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

GO	J.D. Edwards & Comp General Business Syst	
11. Selecti	General Accounting Accounts Revealvable Pinancial Reporting Modeling & Allocatio Payroll Ruman Resources Electronic Mail CASE Profiles Punction Key Def Vocabulary Overn Frocessing Optic Help Instruction	is Repository finitions tides ons
6553	Cmd/HS: Opt: 4=Sel 9=End	P3-Exit P24-More Keys

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
F18	SIGNOFF all group jobs
	Retrieve previous command Display all fast path commands

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

Banadam	Proprint (on	fleen	Chg Date
Version XJDE0001	Description Denver A	User 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

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

983	312 Processing Optic	ns Revisions Form ID 998GRP5 Version 0002
Denve	er C	Version 0002
	job has various options described s ENTER to continue.	below. Enter the desired values and
Desti	ination Virtual Control Unit	<u>V5251</u>
Enter	r ONE of the following:	
1)	Destination Location: (If APPN routing can be used.)	JDEC
2)	APPC Device(s): Communication Device 1: Communication Device 2:	
	<pre>(If \$/38's are involved, an APPN cannot be used.)</pre>	
	Bottom	
	P5=Printer Over	ides

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	This is the APPN network name for the remote location.
(Used in AS/400 Environment)	
APPC Device(s)	These are the APPC devices that identify the route to the
(Used in S/38 Environment)	remote location.
	 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

B98P								Edwards & C Passthru Ne		1	
4. 5.	A - C - D - E -	R 	-	1	+	1	. \$/38 . AS/40 . AS/40 . AS/40 . AS/40	14- 0 15. 0 16. 0 17.	New York San Francisco.	S/38 AS/400 AS/400 AS/400 AS/400	
	ion or		mar	nd							

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

Type choices, press Enter.				
Remote location	+1.00	Name,	*CNNDEV	
+ for more values	•LQC	reame,	• DOC	
Virtual controller	*NONE	Name,	*NONE	
Virtual display device	*NONE	Name,	*NONE	
+ for more values				
Mode	*NETATR		*NETATR	
Local location	*LOC *LOC		*LOC, *NETATR *LOC, *NETATR,	*300302
System request program			*SROMNU	- 00/010
Library			*LIBL, *CURLIB	
				Bottom
P3=Exit P4=Prompt P5=Refresh	F10=Additiona	1 para	meters F12+Can	
F13=How to use this display	F24=More keys			

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 chapter:s

- 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.

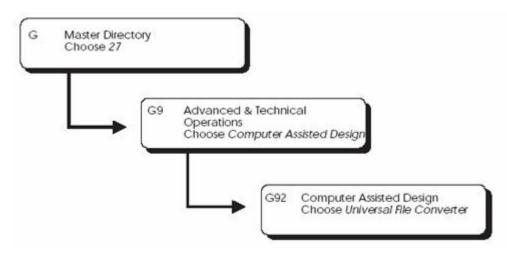


Figure 35–1 Path to the Universal File Converter

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.



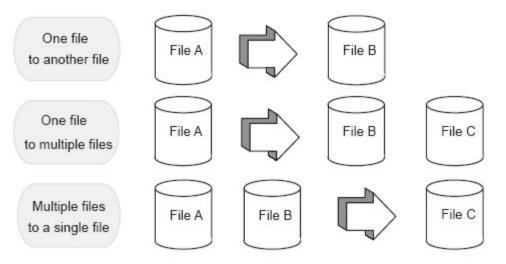


Figure 35–3 How the Cross Over Rules File Defines Associations between Files

Step 1

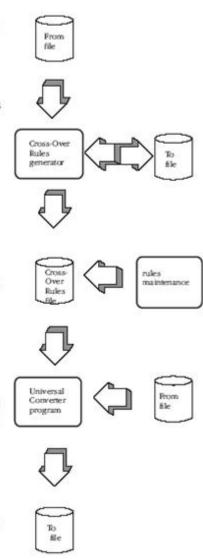
You specify *From* files and *To* files through DREAM Writer processing options. You can specify up to four To files. If you require multiple From files, specify a join logical as the From file in the DREAM Writer "based on" file. The system returns file field information and pre-loads the Cross-Over 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 Programmers DATA FILE CON 2. Version Setup 3. Crossover Rul 4. File Conversi 5. Report	es	JDEG
election 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 <u>P00120</u>
Skip to Vers	ion:			
0 <u>Version</u> XJDE0001 XJDE0002		ver Instruction - quirements - A7.1	Sample DEMO DEMO	r <u>Chg Date</u> 07/23/93 07/20/93
-				
_				
-				
-				
-				
-				
Baser				
	2=Chg 3=Add	-Rpt Dist 5-Cover	r 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:
2. Enter the data from.
JDE File?
2. Enter the name of the file OR files
to convert the data to.
File 1
 1. Enter the name of the file to
                                                                    F92801
                                                                    Y
                                                                    F92801U
             JDE File?
     File 2
             JDE File?
     File 3
             JDE File?
     File 4
             JDE File?
                                P5=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.

98312	Processing Optic	ons Revisions	Form ID P00120 Version APCS
	Ver Instructions		
This job has van press ENTER to (cious options described	below. Enter	the desired values and
"from" file	brary containing the If left blank the will be searched for iles.	P	EMO
"To" file.			EMOS
	F5=Printer Over	rides	

Figure 36–4 Processing Options Revisions screen

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 (("Bytes" x 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.



Action Code I	Crossover Rules 'rom File F4001Z	
Skip to Prom To From File .	To File	
Field T Begin Field Name Pos Bytes Dig Dec **FILLER A 1 00 00 **FILLER A 1 1 00 00	Field T Begin Field Name Pos Bytes Dig Dec SZACCM 988 1000 00 SZALTP P 593 8 15 02 SZAID A 1039 8 00 00 SZAISL A 1131 8 00 00 SZAITM A 316 25 00 00 SZANI A 1010 29 00 00 SZANI A 1010 29 00 00 SZANI A 1010 29 00 00 SZANI A 100 0 00 00 SZANI A 755 1 00 00 SZANIT A 750 1 00 00 SZANIT A 756 4 07 00 SZCADCC P 685 4 07	

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*.

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.

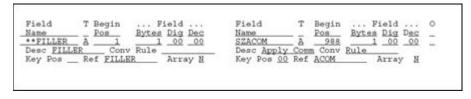
• Press F4 to display detail information in the detail area.

Figure 37–2 Completed Crossover Rules screen

	1 900120 From F: 1 <u>PCS</u> 7928010	mover Rules ile F92801
Prom File		To File
Pield T Begin . Name Pos 4 OXXCC & 47 Desc Bus Unit. Conv B Eev Pos Ref XCC OXIDS & 9 Desc Descriptic Conv B Eev Pos Ref XDS OXXDT S 41 Desc Date Last. Conv B Eev Pos Ref XDT OXXIT S 1 Desc Inter ID. Conv B Desc Inter ID.	Array N Rule Array N 6 06 00	Pield T Begin Pield O Name Pos Bytes Dig Dec O OKXCC A Pos Bytes Dig Dec O Desc Dus Unit Conv Rule Array H CXIDE A 2 30 00 Desc Desc Desc Array H CXIDE A Array H CXIDE A Array H CXIDE A 08 90 Desc Date Last Conv Rule Key Pos 00 Ref XDT Array H Desc Item ID Conv Rule Key Pos 00 Ref XDT Array H Desc Item ID Conv Rule Key Pos 00 Ref XDT Array H Desc Item ID Conv Rule Key Pos 00 Ref XDT Array H Desc Item ID Conv Rule

Instructionused in the conversion process.From File Field Data TypeThe 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) filFrom File Field Begin PosThe beginning position of the field in the "from" file.From File Field Size In BytesThe number of bytes for the field in the "from" file.From File Field Number of DigitsThe 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 PositionsThe number of decimal positions in the "from" file field. (Numeric fields)From File Field DescriptionThe description of the "from" file field. If the file is declared 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	Field	Explanation
types are defined in User Defined Codes, system code '98', record type 'DT'. (F1) Usually A for fields in a PC (ASCII) filFrom File Field Begin PosThe beginning position of the field in the "from" file.From File Field Size In BytesThe number of bytes for the field in the "from" file.From File Field Number of DigitsThe 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 PositionsThe number of decimal positions in the "from" file field. (Numeric fields)From File Field DescriptionThe description of the "from" file field. If the file is declared 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	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 Size In BytesThe number of bytes for the field in the "from" file.From File Field Number of DigitsThe 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 PositionsThe number of decimal positions in the "from" file field. (Numeric fields)From File Field DescriptionThe description of the "from" file field. If the file is declared 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	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 Number of DigitsThe 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 PositionsThe number of decimal positions in the "from" file field. (Numeric fields)From File Field DescriptionThe description of the "from" file field. If the file is declared 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	From File Field Begin Pos	The beginning position of the field in the "from" file.
DigitsIntervention of the intervention of	From File Field Size In Bytes	The number of bytes for the field in the "from" file.
Positions (Numeric fields) From File Field Description The description of the "from" file field. If the file is declared 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 reference		non-packed field this is the same as the number of bytes.
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 reference		1
	From File Field Description	
	REF (Reference)	Use reference field for those conversion rule entries that refer to the Data Dictionary.

Figure 37–3 Completed Crossover Rules screen



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.

Торіс	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	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.
	Negative, or signed fields, must have the 'sign' character in the FROM file.
	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 as55 (with leading blanks), not 0055 or 5500.
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 as55 (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

S/FMT				98FFD
			Libr: F4011Z PGFDTA71	File and
	De	Order	- Batch Receiver File -	_ I4011Z
1		1	Record Type A	_ SZEDTY
1 2	0	2	Record Type A Record Sequence P	_ SZEDSQ
4			Document Key Company A	SZEKCO
9	0	9	Document Number S	SZEDOC
18		27	Document Type A	SZEDCT
20	0	7	Line Number P	SZEDLN
24		6	Transaction Set A	SZEDST
30		10	Translation Format . A	SZEDFT
40			EDI - Transmission D S	SZEDDT
			ctionary 4=Sel F15=Reseque	

- 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)

Version	I	er Rules File F(40012	
From File		To File		
Field T Begin Name Pos **FILLER A Opt: 9-Del F4 9-Del	Bytes Dig Dec 1 1 00 00 1 1 00 00 1 1 00 00 1 1 00 00 1 1 00 00 1 1 00 00 1 1 00 00 1 1 00 00 1 1 00 00 1 1 00 00 1 1 00 00 1 1 00 00 1 1 00 00 1 1 00 00 1 1 00 00	Name SZACCM / SZAEXP / SZAIL / SZAIL / SZAIL / SZAITM / SZANI / SZAPTS / SZAPTS / SZATXT / SZEBIN / SZCADC / SZCOCD /	T Begin Poa A 00004 B 1032 A 1131 A 1010 P 601 A 755 A 750 B 1132 P 685 Fill Pl3	Bytes Dig Dec 00001 00 00 - 8 02 00 - 8 00 00 - 25 00 00 - 29 00 00 - 1 00 00 - - 00 00 - - 00 00 - - 00 00 - - 00 00 - - 00 00 - - 00 00 - - 00 00 - - 4 07 01 - 15 00 00

program returns the field description to the associated field .

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

From File. F4001Z Field Name
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 filed 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.

Keyword	Description
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.
User Defined Code - *UDCsssrr	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 - *DFTcccccc	This keyword loads a default constant to the To field. When typing your request, cccccc 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:

PARM	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.	
	 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.



0031 Action Code	Crossover Rules Add Cross Over Instructions From File Field Name Field Data Type Field Dec Pos Field Dec Pos Field Dec Pos Field Dec Pos Field Data Type Field Dec Pos Field Dec Pos Field Dec Pos Field Dec Pos Field Dec Fos Field D	eld 0 Dig Dec _
OPT:	P3=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.
	 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

DATA FILE CONVERSIO	M	
DATA FILE CONVERSIO 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.

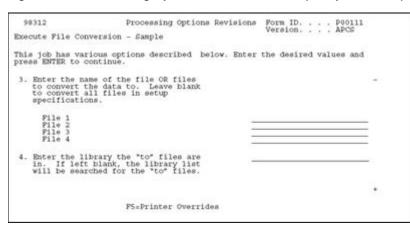
2. Add your own version from a Demo version and go to the processing options of your new version.

98312 Execute Pile Conversi		na Revisiona	Form ID PO0111 Version APCS	
This job has various press ENTER to contin	options described ue.	below. Enter	r the desired values and	r).
FILE SPECIFICATION: 1. Enter the name of version containin specifications. Form ID Version	the Form ID and g the conversion	E	20012.0 IPCE	
	ifferent than the on containing the ications. rv	a		
format as file used t		a		
	P5=Printer Over	rides		

Figure 38–2 Processing Options Revision screen (file spec 1 and 2)

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)



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.

98312	Processing Options Revi	sions Form ID P00111 Version APCS	
Execute File Conv	version - Sample		
This job has vari press ENTER to co	ous options described below. ntinue.	Enter the desired values and	E
File Preparation 5. Enter a 'l' t is being tran	o clear the file data	-	-
records to be "from" file r a single "to"	ber of "to" file created for each ecord. If left blank, file record will be ach "from" file record. Bottom		- -
	P5=Printer Overrides		

Figure 38–4 Processing Options Revisions screen (file spec 5 and 6)	Figure 38–4	Processing Options	Revisions screen	(file spec 5 and 6)
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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

Торіс	Description	
Multiple "From" filesIf you are using multiple From files, remember to cr 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.	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).	
	To verify the format name do a DSPFD on the from file. The file format is listed at the bottom of the display.	
	Always exit the version and re-inquire on the Additional Parameters to verify that the Format Name change was accepted.	
Not writing to the output file	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. 	
	 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 (OPNQRYF) 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"	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.	

39

Print a Report

This chapter contains these topics:

• Section 39.1, "Printing a Report"

39.1 Printing a Report

You can print a report that displays the Cross Over Rules and any associated generic text.

To print a report

1. From the Universal File Converter Menu (G9841), choose Report.

Figure 39–1 Report screen

98300					Repor	t				For	m P0031	P1_
Skip t	o Versi	lon1	-									
		Desc File Co			ŧ			Us DEMO			D <u>ate</u> 5/93	
-												
-												
-												
-												
-												
2												
S												
Opti	1=Run	2. Cha	3=Add	4-Pest	Diet	5+Cover	6 . Det	Orm	0-Dens	44	9=D1t	

The form can list different versions of the File Converter Report. The example shown is for illustrative purposes only.

2. On the Data Selection form, specify your Form ID and version.

Figure 39–2 Processing Options Revisions screen

98312	Processing Options Revis:	ions Form ID I Version	
Pile Converter Repo	et.		
This job has variou press ENTER to cont	s options described below. I inue.	Enter the desired valu	ies and
Glossary for eac	rint Data Dictionary h item. Leave blank Data Dict. Glossary. fields only)	1	
Glossary for eac	rint File Specific h data item. Leave nt. (Prints for "TO"	1	
Text Instruction Leave blank to n	orint the Generic as for each data item. or point the Generic or both "FROM" and Bottom	1	
	P5=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.

98312	Processing Option		· · · <u>P00120</u> XJDE0001
Generate Cross O	ver Instruction - Sample		Level, <u>9</u>
This job has var press ENTER to c	ious options described ontinue.	below. Enter the desig	red values and
FILE SPECIFICATI 1. Enter the na	me of the file to		
JDE Fi	le? me of the file OR files		
File 1 JDE Fi		F92801U Y	
File 2 JDE Fi	le?		
File 3 JDE Fi	1e7		
File 4 JDE Fi	le?		
	F5=Printer Overr		+

Figure 40–1 Processing Options Revisions screen, Generate Cross Over Instructions area

- 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

1.5	3312 Le Converter Report	Processing Options R	evisions Form ID <u>P</u> Version X Display Level. <u>9</u>	
Th	1 - 101 - 101 - 101 - 101 - 101 - 101 - 101 - 101 - 101 - 101 - 101 - 101 - 101 - 101 - 101 - 101 - 101 - 101 -		ow. Enter the desired value	e and
1)	Enter a "1" to prim Glossary for each i to not print the Da (Prints for "TO" fie	tem. Leave blank ta Dict. Glossary.	1	
2)	Enter a *1* to prin Glossary for each d blank to not print. fields only)	ata item. Leave	1	10
3)	Enter a "1" to prim Text Instructions for Leave blank to not p Text. (Prints for b "TO" fields)	or each data item. print the Generic	1	-
		F5=Printer Override		

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 Action Code I Data Item <u>MCU</u>	Data Dictionary	Rls Last Chg <u>A61</u> Item Parent.
Glossary Group D Alpha Desc <u>Busin</u> Reporting System . <u>09</u>		
System Code 09	Type . A Size . 12 CTRSEC Item Occurrences	Data File Decimals Display Decimals
Column Title Bus	ness Unit	
Default Value , Data Display Rules *EAB Data Edit Rules <u>SERV</u>		es Justify
Search Program Next Nbr System	Next Number Index	
F4=Search F8=UDC F9=1	Prev F10=Glossary F11=De	scriptions F15-Where Used

2. Press F10 to display the glossary definition of the data item you selected.

Figure 41–2 Data Item Glossary Revisions screen

		Applic Override Scrn/Rpt . F4102
Action Code I Data Item MCI System Code 09 Glossary Group D		S.
costs, for example, a way	tity within a business for whi rehouse location, job, project ss unit field is alphanumeric.	
or responsibility report	s unit to a voucher, invoice,) ting. The system provides repr xample, to track equipment by ;	orts of open A/P and A/R
Susiness Unit security ca you have no authority.	an prevent you from inquiring (on business units for which
n the Inventory Manageme	ent System, MCU represents a bi	ranch or plant

3. 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

- **1.** Type A in the Action Code field.
- **2.** Type the file name in the Scrn/Rpt field.
- **3.** Type the new text and press Enter.

98	8312 Process	ing Options Revision	ns Form ID <u>P0031P1</u> Version <u>XJDE0001</u>
Fil	le Converter Report		Display Level. 2
	is job has various options de ass ENTER to continue.	escribed below. En	ter the desired values and
1)	Enter a "1" to print Data D: Glossary for each item. Let to not print the Data Dict. (Prints for "TO" fields only	ave blank Glossary.	1
2)	Enter a "1" to print File Sp Glossary for each data item blank to not print. (Print: fields only)	Leave	1
3)	Enter a "1" to print the Ger Text Instructions for each of Leave blank to not print the Text. (Prints for both "FRG "TO" fields)	lata item. 9 Generic	·
	F5=Prin	ter Överrides	

Figure 41–3 Processing Options Revisions screen

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.

CL Models

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

Fiaure C–1	Software Versions	Repository screen	(description: interactive video)
			(accomplicit interactive trace)

9801	Software Versions Repository	
Action Code. Member ID. Description. Punction Cod Punction Use System Code. Reporting Sy Base Member Maint/RSTDSP Copy Data (Y	. <u>J99MODEL1</u> . <u>Model CL Program - Interactive Video</u> e. <u>CLP</u> CL Programs . <u>198</u> Model Source Member <u>98</u> Technical Tools stem <u>98</u> Technical Tools Name <u>J99MODEL1</u> Pile Prefix Omit Option <u>Q</u> Generation Sev	
0 Source <u>P_Library</u> JDFSRC73	Object Source SAR Version S D User Library File Number ID C P ID JDFOBJ73 JDESRC 981283 A73 1 BECK	Date Modified 07/07/95
Opt: 1=Br	owse 2=Edit 3=Copy 5=SAR 8=Print 9=Dlt 10=Design 3	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		Softwar	e Versions	Repositor	Y		
Action Code Member ID Description . Punction Code. System Code. Reporting Syst Base Member Na Maint/RSTDSP . Copy Data (Y/N	- <u>J98MOD</u> - <u>Model</u> - <u>CLP</u> - <u>198</u> - <u>98</u> - <u>98</u> - <u>98</u> - <u>0m</u>	L Program CL Program Model Sc Nechnical Nechnical Nechnical	urce Membe Tools Tools Q G	r ile Prefix			er File
P_Library	Object Library JDFOBJ73		SAR <u>Number</u> 867923		_ C P		Date <u>Modified</u> 07/07/95
Opt: 1=Brow	se 2=Edit	3=Copy	5=SAR 8=P	rint 9=D1	t 10=De	eign 1	4=Crt

C.3 J98MODEL3 - Interactive Video Prompt

Figure C–3 Software Versions Repository screen (description: interactive video prompt)

9801	Software Versions Repository
Description. Punction Cod System Code. Reporting Sy Base Member Maint/RSTDSP	. J98MODEL3
0 Source <u>PLibrary</u> JDFSRC73	Object Source SAR Version S D User Date Library File Number ID C P ID Modified JDFOBJ73 JDESRC 867923 A73 1 BECK 07/07/95
Opt: 1=Br	owse 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	Softwa	re Versions	Repository	1		
Action Code Member ID Pusction Code Punction Code System Code Reporting System Base Member Name Maint/RSTDSP . Copy Data (Y/N).	Model CL Program <u>CLP</u> CL Program <u>128</u> Model S. <u>98</u> Technical <u>J28MODEL4</u> Omit Option	ns ource Membe Tools Tools F <u>Q</u> G	r ile Prefix eneration S		cessing O	ptions
P Library Lib	ect Source rary File OBJ73 JDESRC	SAR <u>Number</u> 867923	ID	S D C P L BEC		Date odified 7/07/95
Opt: 1=Browse	2=Edit 3=Copy	5=SAR 8=P	rint 9=D1	10=Des	ian 14=C	ŶŤ

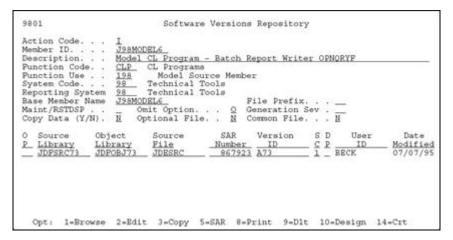
C.5 J98MODEL5 - Batch Report Writer - No DDS File

Figure C–5 Software Versions Repository screen (description: batch report writer - no DDS file)

9801		Softwar	e Version	s Reposito:	ry		
Action Code. Member ID. Description. Punction Code System Code. Reporting Sy Base Member Maint/RSTDSI Copy Data (N	<u>J98MOI</u> <u>Model</u> <u>CLP</u> <u>98</u> <u>98</u> <u>98</u> Name <u>J98MOI</u> O	CL Program CL Program Model So Technical Technical <u>ELS</u> ait Option.	urce Memb Tools Tools Q	Report Writ er File Prefi: Generation Common File	x Sev		0
0 Source <u>PLibrary</u> JDFSRC73	Object Library JDFOBJ73	File	Number	Version ID 3 A73		ID	Date <u>Modified</u> 07/07/95
Opt: 1=B:	owse 2=Edit	3=Copy	5=SAR 8=	Print 9=D	1t 10-D4	esign 1	4=Crt

C.6 J98MODEL6 - Batch Report Writer OPNQRYF

Figure C–6 Software Versions Repository screen (description: batch report writer OPNQRYF)



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)

9801		Software Ver	sions Repositor	¢γ	
Action Code. Member ID. Punction Code System Code. Reporting Sy Base Member Maint/RSTDSF Copy Data (N	. <u>J98MODE</u> . <u>Model C</u> e. <u>CLP</u> C . <u>98</u> T stem <u>98</u> T stem <u>J98MODE</u> . <u>_</u> Omi	L Program - Ba L Programs Model Source M Cechnical Tools Cechnical Tools	Member File Prefix	(Sev	OOF Reset
O Source <u>P Library</u> JDPSRC73	Object Library JDFOBJ73	File Nu	AR Version nber ID 57923 A73	S D User C P ID I BECK	r Date <u>Modified</u> 07/07/95
Opt: 1=B:	owne 2=R4iF	3=Copy 5=SAR	B=D+in+ 9=D1	t 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)

9801		Softwar	e Versions	Repositor	У	
Action Code. Member ID Punction Cod Punction Use System Code. Reporting Sy Base Member Maint/RSTDSP Copy Data (Y	<u>J98MOD</u> <u>Model</u> e <u>CLP</u> <u>128</u> <u>98</u> stem <u>98</u> Name <u>J98MOD</u> Om	CL Program CL Program Model So Technical Technical EL8	urce Membe Tools Tools Q G	r ile Prefix		Process
0 Source P Library JDFSRC73	Object Library JDFOBJ73		SAR <u>Number</u> 867923			User Date ID <u>Modified</u> K 07/07/95
Opt: 1=Br	owse 2=Edit	3=Copy	5=SAR 8=P	rint 9=D1	t 10=Des	ion 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 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 (("Bytes" x 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.

E Dates

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(MMDDCCYY).

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	
\$OFSET	OFSET 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.	

Parameter	Description
#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.	

Parameter	Description
#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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