

# **HP Software Revision Controller Implementation Guide**



**HP Part No. 30234-90003  
Printed in USA 11/88**

**E1188**

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## Printing History

New editions are complete revisions of the manual. Update packages, which are issued between editions, contain additional and replacement pages to be merged into the manual by the customer. The dates on the title page change only when a new edition or a new update is published. No information is incorporated into a reprinting unless it appears as a prior update; the edition does not change when an update is incorporated.

The software code printed with the date indicates the version level of the software product at the time the manual or update was issued. Many product updates and fixes do not require manual changes and, conversely, manual corrections may be done without accompanying product changes.

MPE/V	First Version	November 1988	30234 A.00.00
MPE/XL	First Version	November 1988	30328 A.00.00



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## Preface

HP Software Revision Controller (HP SRC) is an effective file management tool that several programmers can use concurrently in a code development environment. This guide helps you plan and define the procedures necessary to meet your specific operation requirements.

This guide is intended for programmers and system administrators who install or use HP SRC software. It is suggested that new HP SRC users read the first chapter of the *HP SRC User's Guide* (30234-90001) and the tutorial, *Learning HP SRC* (30234-90002), before reading this guide.

The purpose of each chapter is as follows:

- |           |  |
|-----------|--|
| Chapter 1 | This chapter provides information about analyzing your current code development file management, and provides examples of suggested HP SRC file management configurations. The examples discuss the resources and changes involved in HP SRC implementation. |
| Chapter 2 | This chapter provides guidelines for product implementation during various stages of the code development cycle. The guidelines are based on an implementation model presented at the beginning of the chapter.  |
| Chapter 3 | This chapter provides information about additional special topics that do not pertain to the basic implementation procedures presented in chapter 2. Topics include parallel and dual development, and using HP SRC across account and machine boundaries.   |



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## CONFIGURATION ANALYSIS

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This chapter provides information about integrating HP SRC into your existing program development methodology, which involves current project processes and the MPE accounting structure. Your HP SRC implementation choice is largely dependent on your current methodology. The chapter includes examples of common MIS program development methodologies, which can assist you in choosing the proper implementation.

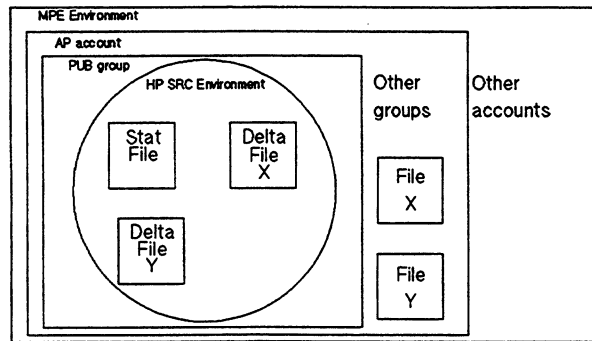
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### The HP SRC Environment

HP SRC, like MPE, provides a file management environment. MPE provides an environment for keeping files (groups, accounts, and volumes) and also maintains certain file information, such as the creator, date last modified, etc. This environment is sufficient for most operational tasks of file management, such as security and backups. However, MPE cannot perform other important source file management tasks, such as providing a log of changes, keeping track of different versions, or allowing for the concurrent maintenance of the source code by more than one user. The HP SRC environment enables you to perform these tasks as well as others.

When you *check in* an MPE file into the HP SRC environment using the Chkin command, HP SRC creates or updates files in the HP SRC environment. The environment contains a *Stat* (SRCSTAT) file and accompanying *Delta* files. These files comprise a special directory of files that encode your original file and add some important information about that original file.

Figure 1-1 shows the relationship of the MPE environment to a basic HP SRC environment, which resides in the PUB group of an account called AP. The MPE environment contains the AP account and several other accounts. The AP account contains the PUB group where the HP SRC environment resides as well as several other groups. The Stat file and Delta files in the PUB group contain all of the information HP SRC uses to track files.



**Figure 1-1. The MPE and HP SRC Environments**

You can implement an HP SRC environment for any MPE group. The home group for the HP SRC environment is called the *stat* group, where the file SRCSTAT resides. Regular MPE files that you want to track using HP SRC can optionally reside in the same group as their HP SRC environment.

An MPE account can contain more than one HP SRC environment, up to one environment per MPE group for an account. For example, one HP SRC environment could maintain source files in a group called SOURCE, another HP SRC environment could maintain documentation in a group called DOC, and the third HP SRC environment could keep the executable programs in a group called PROG. Alternatively, you could keep source, documentation, and programs in one environment in a single group called ARCHIVE.

---

## Pre-Implementation Analysis

Before proceeding, you must first decide which projects you want to manage using HP SRC. As a new HP SRC user, you might want to start with a single simple project. Once you become familiar with HP SRC, you can either add more projects to the same HP SRC environment or create separate environments. Since an HP SRC environment can contain a large number of files, you could even combine all development projects into one environment, if desired.

In order to determine the best HP SRC setup, you should consider the following aspects of your current program development management:

- Common files - files shared by another project
- Unique file names - distinct file name spelling
- Account structure - group and account location of files for a project

## **Common Files**

HP SRC can easily manage files shared by multiple users. Consequently, if any of your projects share files with other projects, you might consider combining these common files into one HP SRC environment. You would then only need to maintain one set of shared files.

However, if no shared files exist between projects, it is suggested that you maintain project independence by keeping files from different projects completely separate in their own HP SRC environments.

## **Unique File Names**

Sharing a common HP SRC environment does not require that all files in an MPE account have unique file names. Only those files tracked by the common HP SRC environment must have unique names. The important concept is that duplicate file names should not exist in the same HP SRC environment.

When you check in a file, HP SRC retains only the MPE file name but not any qualifications for the MPE group and account names. As described earlier, HP SRC offers the flexibility of maintaining files from multiple groups in a single HP SRC environment. HP SRC allows multiple users, logging onto their own MPE groups, to share different copies of the files. The Chkin command defaults the HP SRC environment to the PUB group of the logon account. Therefore, whichever group you are logged onto, checking in a file places that file in the HP SRC environment residing in the PUB group.

For example, checking in FILEA.GROUPX.AP and FILEA.GROUPY.AP would assign both files to the same HP SRC environment in PUB.AP for file FILEA. HP SRC would assume that the two files are simply different versions of file FILEA. This is, of course, how you would want HP SRC to respond if these two files were actually two versions of the same file.

The potential for conflicting file names may persuade you to separate several projects into different HP SRC environments. Of course, you can always optionally rename any non-unique files so that HP SRC can differentiate them. If there are only a few files that are not unique, and there is no valid reason to maintain them with the exact same name, renaming is a good solution. If many files have the same names, putting files in separate HP SRC environments may be the best alternative.

## **Account Structure**

HP SRC adheres to MPE file system security. The ability to check in and check out files across group and account boundaries depends on the MPE file access security configuration for the groups and accounts. Generally, it is more manageable to initiate an HP SRC environment within the same account.

A project that currently spans multiple accounts would be maintained in several HP SRC environments. However, maintaining this project in a single HP SRC environment would be beneficial. For instance, you could check in and check out all modules of a release, move all files from development to production, etc. Consequently, you may want to consider restructuring your projects from multiple accounts to a single account.

---

## Configuration Examples

This section provides examples of MIS program development configurations and recommended HP SRC environments for single and multiple accounts. Each example briefly describes the current MPE configuration and then recommends a compatible HP SRC environment. Your development methodology may be more complex than the examples provided, but the decision process for the most effective HP SRC environment should be the same.

### Single Account Configurations

The following examples provide HP SRC recommendations for these types of single account configurations:

- Common files with unique names
- Common files with some duplicate names
- Uncommon files with unique or duplicate names

#### Common Files, Unique Names

Figure 1-2 shows a configuration in which two projects reside in different groups (GRP1 and GRP2) but under the same MFG account. The projects share some common edit routine files. Since there is a naming convention established in the configuration, there are no duplicate file names.

Generally, a single HP SRC environment would be used with common files. In this case, the unique file names of X, Y, A, and B enable users to avoid potential conflicting files.

The recommendation for this configuration is to set up a single HP SRC environment in one group of the account (HP SRC defaults to the PUB group) as shown.

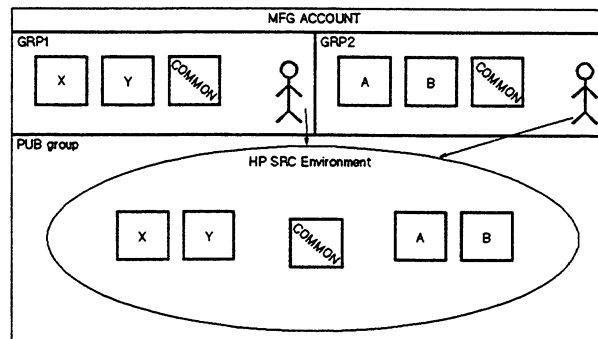
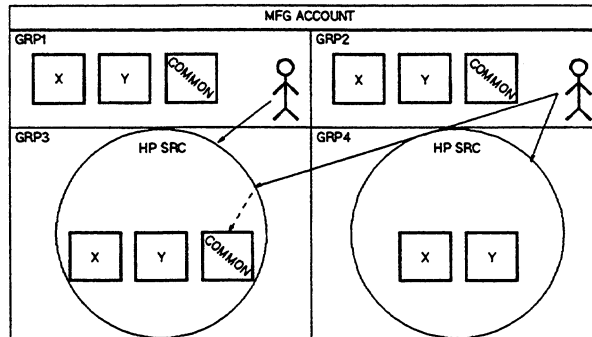


Figure 1-2. Common Files With Unique Names

#### Common Files, Some Duplicate Names

Figure 1-3 shows a configuration similar to the one shown in figure 1-2, except for the duplicate files X and Y in GRP1 and GRP2. Although the names are the same, the contents of the files are different. Although the existence of common files suggests a single HP SRC environment, a single environment cannot properly handle duplicate file names.

The recommendation for this configuration is to rename the duplicate file names, if possible, and maintain the project under a single HP SRC environment. If, however, duplicate naming is undesirable for the project structure, the recommendation is to set up a separate HP SRC environment in each group as shown.



**Figure 1-3. Common Files With Some Duplicate Names**

Note that you should track common files in only either one of the HP SRC environments. To access the common files in another HP SRC environment, you can use the following options, in order of preference, to specify the Stat group of the HP SRC environment desired:

1. Specify the Stat parm in the command line
2. Use a file equation to redirect the SRCSTAT file
3. Use a customized UDC with the Stat parm as the default

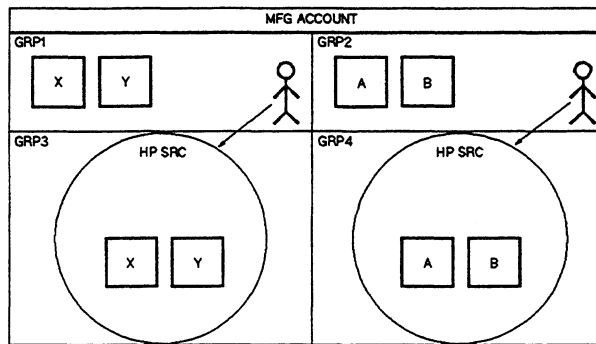
Refer to “Setting Up UDCs” in chapter 2 for further information.

### **Uncommon Files, Unique Or Duplicate Names**

Figure 1-4 shows a configuration in which the projects do not share common files. The projects could contain either unique or duplicate file names.

The recommendation for this configuration is to set up a separate HP SRC environment for each project, because it is easier to manage the groups and files belonging to separate projects under separate HP SRC environments. This solution negates the impact of the unique file names, because they are tracked under separate HP SRC environments.

Note that this solution does not suggest that each MPE group must have its own environment. However, if project files are in several different groups, the unique file names between these groups should be taken into consideration when deciding on a single environment or several environments for the project.



**Figure 1-4. Uncommon Files - Unique or Duplicate Names**

## Multiple Account Configurations

The following examples provide HP SRC recommendations for these types of multiple account configurations:

- Frequently modified common files with unique or duplicate names
- Infrequently modified common files with unique or duplicate names
- Uncommon files with unique or duplicate names

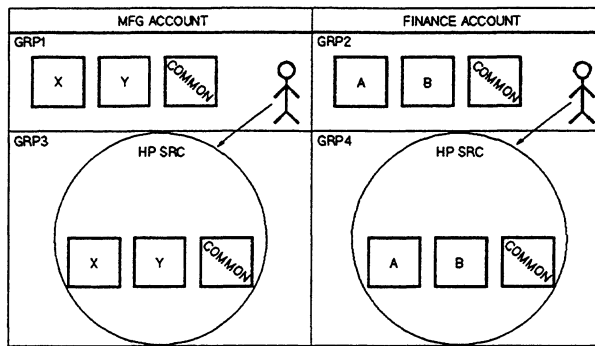
### Frequently Modified Common Files, Unique or Duplicate Names

Figure 1-5 shows a project configuration with two separate projects under two separate accounts, MFG and FINANCE. The common files are modified frequently.

Since common files are involved in this configuration, ordinarily a single HP SRC environment would be recommended. Because of MPE security restrictions, though, you cannot check in files from the logon account to an HP SRC environment in another account. Since the common files are frequently being checked in and out, continually logging onto the account containing the HP SRC environment to issue the Chkin command may become too unwieldy.

The alternate recommendation for this configuration is to set up separate HP SRC environments in each of the accounts, thereby maintaining separate copies of the common files for each project. This solution is most beneficial for projects spanning account boundaries where there is considerable check in and check out activity.

Periodically, the common files can be “synchronized” by merging them together and copying the result back to the separate accounts. Refer to “Creating Separate Environments For Simultaneous Development” in chapter 3 for information about this merging process.



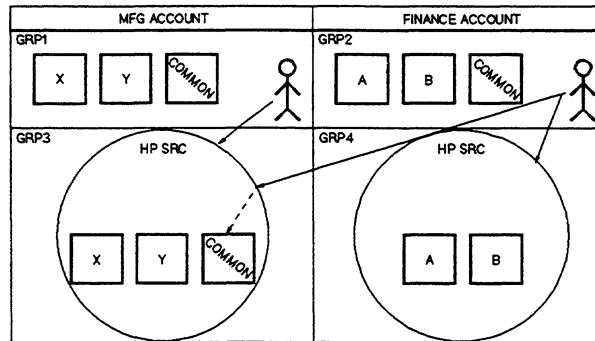
**Figure 1-5. Frequently Modified Common Files**

**Infrequently Modified Common Files, Unique or Duplicate Names**

Figure 1-6 shows a project configuration similar to that in figure 1-4, except that the common files are modified infrequently.

The recommendation for this example is to implement separate HP SRC environments for both accounts. This avoids the necessity of recurring logons for some file check ins. This solution is most beneficial for projects spanning account boundaries where there is relatively little check in and check out activity.

You may want to maintain the set of common files in only one of the environments. If you decide to do this, you may want to put the common files in the HP SRC environment where the majority of the modification activity for the common files takes place. You can check out these common files from the account where the clear versions of the files are needed for tasks, such as compiles, integration, etc. Refer to “Accessing An HP SRC Environment From Other Accounts” in chapter 3 for information on accessing common files across account boundaries.

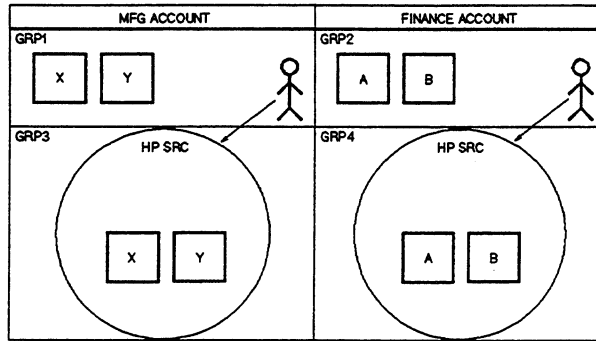


**Figure 1-6. Infrequently Modified Common Files**

**Uncommon Files, Unique or Duplicate Names**

Figure 1-7 shows a project configuration in which two projects reside in two separate accounts, MFG and FINANCE. No code is shared between the projects. There could be either unique or duplicate file names.

The recommendation for this configuration is to implement separate HP SRC environments for each account because of the potential conflict of duplicate file names within an account.



**Figure 1-7. Uncommon Files - Unique or Duplicate Names**



## IMPLEMENTING HP SRC

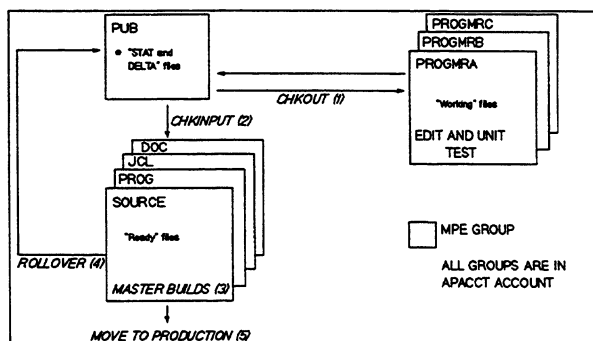
This chapter provides the necessary procedures to implement an HP SRC environment that best suits your own unique program development environment.

The chapter first presents an implementation model, which forms the basis of the procedures that follow. Although this model is recommended, it should not be regarded as the only possible model. The project team will probably want to develop their own methodology based on their needs.

The step-by-step procedures provide the tasks required to implement the HP SRC environment during various stages of the code development cycle.

### The HP SRC Implementation Model

Figure 2-1 illustrates how a project development team could implement an HP SRC environment. The accounting structure described is highly recommended. You should be able to apply this information to your own environment, even though your environment may differ from the suggested environment.



**Figure 2-1. HP SRC Implementation Model**

## Model Physical Characteristics

Figure 2-1 shows that the development project team functions within one account, designated APACCT. Each box represents one group in the APACCT account. Team members work from files in their own groups as shown by the boxes in the upper right corner. It is assumed that the Stat file and Delta files reside in the PUB group of the account. (You may put these files in a group other than PUB.) Different *Ready* groups, such as SOURCE, PROG, DOC, and JCL, store source, program, documentation, and JCL files separately.

It is strongly recommended that you store the Stat and Delta files in a group separate from your working file groups. Organizing the files in this manner enables you to use the wildcard option of HP SRC commands more effectively.

## Model Functional Characteristics

Using the implementation model described, the development cycle would proceed as follows:

1. Team members check out revisions of the Delta files (source, program, JCL, or documentation files, etc.) to their own groups. Team members also copy necessary object files, such as USL files, into their own groups in preparation for compilation.
2. After the files are edited, compiled, and have passed unit-testing, programmers use the Chkincopy command to check in the "verified" files into the HP SRC environment and keep copies of the "ready" text in a separate group. More than one "ready" group can provide partitioning of project functions with group names, such as SOURCE, PROG, DOC, or JCL.
3. Team members perform master builds as often as necessary. A master build is the major compilation that incorporates different modules developed by different programmers on the same project. Master builds enable each programmer to have the most recent object code available, which reduces system test risk.
4. When ready for release, programmers submit the files to HP SRC and assign a symbolic name to link them together. This name enables a programmer to more easily retrieve files at a later date.
5. Finally, programmers move the files to the production account. Files moved might include source, program, JCL, and documentation files.

The remainder of this chapter explains how programmers use HP SRC to implement this functional model.

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## Implementation Procedure

The following sections provide detailed information and procedures for the following implementation tasks:

1. Installing HP SRC
2. Setting up UDCs
3. Setting up the user access list
4. Initially checking in different file types
5. Using HP SRC during code development
6. Building a release and moving to production

Note that the examples provided in the procedures do not provide the exact command syntax, except where needed. Some of the command examples explicitly specify formal keyword parameters along with their values, such as:

```
chkout file=myfile;to=doc
```

You can specify commands without the formal keyword parameters if you adhere to the parameter's positional ordering. For instance, you could enter the above example as:

```
chkout myfile,,doc
```

Refer to the *HP SRC User's Guide* for specific information about commands used in the examples.

### Installing HP SRC

Perform the following steps to install HP SRC:

1. Install HP SRC using the Auto-Install procedure provided. Note that HP SRC runs on any HP 3000 that uses the MPE operating system. The minimum code segment configuration size for MPE/V systems is 16,384 words.

Auto-Install moves the HP SRC program file (HPSRC), message catalog file (HPSRC000), help catalog file (SRCHELP), and HP SRC UDC file (HPSRCUDC) into the PUB group of the SYS account.

2. Set up the account structure for the HP SRC environment. This includes the group for the Stat and Delta files, each programmer's group, as well as various "ready" groups for source, program, and JCL files.

The following examples show two possible environments with the appropriate file security specifications and capability classes.

## Author1/Librarian Environment

Stat and Delta group : ACCESS=(R,L:AC;W,A,S:AL,GU) ; CAP=IA,BA  
Programmer Group : ACCESS=(R,W,A,L,X,S:AL,GU) ; CAP=IA,BA  
Ready Group : ACCESS=(R,L:AC;W,A,S:AL,GU) ; CAP=IA,BA  
Author1 user  
capabilities : CAP=IA,BA,GL,ND,SF  
Librarian user  
capabilities : CAP=IA,BA,AL,GL,ND,SF

## Author2 Environment

Stat and Delta group : ACCESS=(R,W,A,L,S:AC; X:GU) ; CAP=IA,BA  
User Group : ACCESS=(R,W,A,L,S:AC; X: GU); CAP=IA,BA  
Ready Group : ACCESS=(R,W,A,L,S: AC; X: GU); CAP=IA,BA  
Author2 user  
capabilities : CAP=IA,BA,AL,GL,ND,SF

## Setting Up UDCs

This section provides procedures for the following:

- Setting up the HP SRC UDC for the development account
- Customizing the HP SRC UDC
- Putting Delta files in a group other than PUB
- Setting up the UDC at the system level

Before proceeding, consider the following points regarding setting up the HP SRC UDC in your environment:

- Only customize (change defaults of parameters and change the command names) as described below. HP does not support any UDC customization that involves changes on the actual RUN commands in the UDC file.
- Once you set up the HP SRC UDCs, do not allow any unauthorized person to modify them.

## Setting Up the HP SRC UDC for Development Accounts

As mentioned in the installation section, the HP SRC UDC file (HPSRCUDC) is included with the product. When you install HP SRC, it is restored to the PUB group of the SYS account. To set up the HP SRC UDC for the model environment, do the following:

1. Log on as the manager of the development account.
2. Issue the following command to set up the UDC for the entire development account:

```
setcatalog hpsrcudc.pub.sys;account
```

## Customizing the UDC and Setting Up the Customized UDC

Before using the UDC commands, you should review the defaults provided by the commands in the HP SRC UDC file. For example, PUB is the default for the *stat* parameter and the logon group is the default for the *to* and *from* parameters in several commands. Although not required, you may want to modify these defaults to make the product easier to use for your particular environment.

## Putting Delta Files in a Group Other Than PUB

You may want to put the Stat and Delta files in a group other than the PUB group if:

- You maintain different account and group security standards for the PUB group
- You have multiple HP SRC environments in one account

For either situation, you can specify *stat* to override the default, or you can customize the HP SRC UDCs. It is strongly recommended that you add another local layer of UDCs on top of the existing HP SRC UDCs (create your own UDCs that call the HP SRC UDCs).

The following procedural examples show methods of using the Chkout command to put the Stat and Delta files in a group designated HPSRC.

### To check out a file by explicitly specifying the Stat group:

Enter the following command:

```
chkout file=myfile,stat=hpsrc
```

### To customize your local HP SRC UDC file so that the default for the Stat group is HPSRC:

1. Access a text editor and text in only the definition portion of the Chkout command from the HPSRCUDC file.
2. Modify the default for *stat* to HPSRC, and add the command to execute the HP SRC UDC.
3. Keep the file as Myhpsrc. The file should appear as follows:

```
chkout file=" ", rev=" ", to=" ", replace=" ", key=" ", &  
list=" ", stat="HPSRC"
```

```
chkout !file, !rev, !to, !replace, !key, !list, !stat
```

4. Set the catalog again with the UDC files in the proper priority at the account level by issuing the following command:

```
setcatalog myhpsrc, hpsrcudc.pub.sys;account
```

This forces MPE to search for the commands in the order of the files specified above. Consequently, the commands in the Myhpsrc file are searched before the commands in the hpsrcudc.pub.sys file.

5. Issue the following command to check out a file:

```
chkout myfile
```

Ordinarily, the *to* parameter in the Chkincopy command is blank, which defaults to the logon group. This is the name of the group where you want to keep the tested copy. The following procedural examples show methods of using the Chkincopy command to override the *to* parameter default or to customize the HP SRC UDC when you want to keep files in other groups.

#### **To override the default when you keep the files in other groups:**

Enter the following command to copy Myprog to the PROG group:

```
chkincopy file=myprog,to=prog
```

Enter the following command to copy Mydoc to the DOC group:

```
chkincopy file=mydoc,to=doc
```

#### **To customize the HP SRC UDC to add new commands and place the working files in other groups:**

1. Log on as the manager of the APACCT account.
2. Access a text editor and add the following commands to the existing local UDC file:

```
chkincopy file=" ", rev=" ", from=" ", to="prog", sym=" ", &  
replace=" ", log=" ", chg=" ", desc=" ", mask=" ", list=" ", &  
stat=" "
```

```
chkincopy !file, !rev, !from, !to, !sym, !replace, !log, !chg, &  
!desc, !mask, !list, !stat
```

3. Keep the file as SRCUDC.
  4. Set the catalog at the account level by issuing the following command:
- ```
setcatalog srcudc,hpsrcudc.pub.sys; account
```
5. Issue the new command to check in a file and copy it to the PROG group.

```
chkincopy myprog
```

You could use the procedure above to create the following new commands:

`chkincopyj myjcl` (To place the copy in the JCL group)

`chkincopyd mydoc` (To place the copy in the DOC group)

### Setting Up the UDC at the System Level

You may occasionally want to set up standard UDC commands across different projects on the system. You would set the customized HP SRC UDC file at the system level if the majority or all of the accounts on the system use HP SRC and the group structure of these accounts is similar.

A system-level UDC provides the following advantages:

- An identical user interface exists for all HP SRC users on the system
- Having one UDC file provides easier maintenance

Perform these steps to set up a UDC at the system level:

1. Log on as the system manager
2. Customize the file as desired
3. Issue the following command:

```
setcatalog hpsrcudc;system
```

### Setting up the User Access List

This section provides the following procedures and guidelines:

- Creating a user access Stat file
- Adding HP SRC users with appropriate security capability
- Understanding security class applications

HP SRC provides five classes of security: Reader, Author1, Author2, Librarian and Admin. Refer to the *HP SRC User's Guide*, for complete information about these security classes.

You must be included on the HP SRC access list to read or write to any of the files in the HP SRC environment. You become the administrator of an HP SRC environment, by being the first person to check in a file. This action causes HP SRC to assign you Admin capability.

The account manager should normally be given Admin capability. It is the Admin user's responsibility to add other HP SRC users with the proper security levels using the ADDUSER command.

### Creating a User Access File

You may need to create a valid user list before checking in the files you want to keep under the HP SRC environment. For instance, you may not have created any files yet. A "dummy" check-in enables you to create the Stat file and gives you Admin capability. You can then add other users to the environment.

To perform a dummy check-in:

1. Issue the Chkin command as shown to create the Stat file, place the existing or non-existent file called *anyfile* in the HP SRC environment, and assign yourself (i.e., your logon *username.accountname*) as the administrator of the HP SRC environment:

```
Chkin file=anyfile;stat=statgroup
```

Note that you only need to specify the *stat* parameter if you want your Stat file in a group other than the PUB group, or other than the group that has been customized in the HP SRC UDC, or other than what a file equation for SRCSTAT specifies. HP SRC responds by displaying the following message:

```
No HP SRC environment exists, would you like to create a new one? (Y/N)
```

2. Reply yes (y) to the prompt. HP SRC displays the following message indicating that the Stat file has been created:

```
Status file created in GROUPNAME.ACCOUNTNAME  
(group.account) (SRCINFO 072)
```

If the file you specified does not exist, HP SRC displays an error message stating that the specified file does not exist. Disregard this message, however, because HP SRC creates the environment anyway.

### Adding HP SRC Users

To add HP SRC users:

1. Issue the following file equation to begin adding user names to the user access list of the environment you created (if different than the default PUB group or your customized UDC).

```
FILE SRCSTAT=SRCSTAT.STATGROUP
```

Note that if you have customized your UDC file, the group specified in the UDC overrides the file equation.

2. Issue the Adduser command as shown, substituting the appropriate logon and security class name:

```
Adduser username.accountname,classname
```

3. Verify that the logon has been added to the access list by issuing the following command:

```
Listusers
```

HP SRC responds by displaying the users entered for the group access list. The added logon should be one of the listed users.

### Selecting Appropriate Security Assignments

Security assignments vary according to the security requirements for a given project. The basic assignment categories, in the order of capability, are:

- Admin
- Author1, Author2, Librarian
- Reader



The following information provides implementation suggestions for each of these categories.

**Admin Capability.** You should assign Admin security to only one person who adds and deletes users, and also recovers the HP SRC environment. In many cases, a system administrator or account manager is a good choice for Admin capability.

**Author1, Author2 And Librarian Capability.** Your project development philosophy should determine whether you assign users Author1, Author2 or Librarian capabilities. The following security arrangement examples may help you to decide on the appropriate security assignments for Author1, Author2, and Librarian capabilities.

### **Lead Programmer Arrangement**

One lead programmer is assigned to each project team. The programmers make changes to the code in their own groups. When all of the code changes are complete and tested, each programmer sends the code to the lead programmer who checks it for accuracy and uniformity. Once approved, the lead programmer copies the updated file into a separate source group.

In this example, the lead programmer would be assigned Librarian capability and all other programmers would be assigned Author1 capability. In this security scheme, the Author1 programmers could check out and lock files, but could not check in those files. Only the lead programmer with Librarian capability would be able to check in any files.

Since the same person (the Librarian) would check in files for the entire team, the revisions would always be stamped with his or her user name. You would probably want to document the name of the programmer who made the modification in the log text of each revision.

### **Master Builder Arrangement**

This arrangement provides programmers with more flexibility to manage code, but still maintains control of the project by assigning one person with Librarian capability to perform the project master build.

In this situation, the project team members are assigned Author2 capabilities and the project librarian is assigned Librarian capability. By assigning Author2 security to the project team members, they can execute any HP SRC command except for commands that add users and delete users, and perform an HP SRC crash recovery. However, they are generally limited to performing commands on those files or revisions that they themselves have checked out or own.

By assigning the Librarian level of security to the person who controls the master build, you still maintain needed control while providing some flexibility. For example, if you are performing a master compile and build of the software and someone has not checked a file back in yet, the person with Librarian capability can override the normal HP SRC security mechanisms and check the file in.

**Reader Capability.** A user with Reader capability can retrieve revisions from the HP SRC environment, but cannot write back to the environment. Typically, a support or auditing user would have this capability. For example, support personnel may want to only examine source code in the HP SRC environment to troubleshoot a customer problem.

## Initially Checking In Various File Types

You initially check in files into the HP SRC environment using the Chkin command. You should follow these guidelines when initially checking in files:

1. Determine the appropriate Chkin mask option based on whether the file is ASCII, binary, numbered, etc.
2. Convert numbered files to unnumbered, if necessary.
3. Check in the files to the HP SRC environment in a form compatible with the file type.

The Chkin command provides the following mask options:

- Nomask - The default for ASCII files
- Nummask - For numbered files where the value of the line numbers is insignificant
- Fullmask - The default for binary/non-ASCII files and files with user labels

Before you initially check in a file, it is important to decide which of the mask options is appropriate for the file to be checked in. After you initially check in a file with one of the mask options, you cannot change it later. HP SRC ignores any subsequent attempt to override the mask option when you issue the Chkin command the next time.

Refer to the Chkin command in the *HP SRC User's Guide* for more information on the mask options.

The following sub-sections provide general information and procedures for the following topics:

- Using standard naming conventions
- Checking in unnumbered ASCII files
- Checking in numbered files
- Converting numbered files to unnumbered files
- Checking in binary or non-ASCII files
- Using lockwords
- Providing description text

### Using Standard Naming Conventions

Before you begin checking in and checking out files, it may be advantageous to consider using standard naming conventions. One example of the effectiveness of naming conventions would be for a finance project.

You could specify an "ap" prefix for all files related to accounts payable, and you could specify an "s" suffix for all source files. You could use these conventions along with HP SRC wildcard characters and symbolic naming capability to easily identify the files in each project. Refer to chapter 4 of the *HP SRC User's Guide* for information about wildcard characters and symbolic names.

You can also use naming conventions to effectively manage more than one project in one HP SRC environment. For example, you could have a purchasing project ("pur" prefix) and an accounts payable project ("ap" prefix) in the same environment. You could use the wildcard option to check in all of the files related to each project.

**To check in all files of an accounts payable project for release A.00.01:**

```
chkin ap@s, A.00.01
```

**To check in all files for an accounts payable and purchasing project:**

```
chkin ap@  
chkin pur@
```

### **Checking In Unnumbered ASCII Files**

To check in unnumbered ASCII files, issue the Chkin command without specifying a mask option. When you do not specify a mask option, the default is the Nomask value. This value provides the most efficient usage of disc space for file storage.

HP SRC examines the entire file when calculating the differences between the old revision and the new revision, and then stores the differences between the two in the Delta file. HP SRC handles fixed ASCII files with up to 256 byte records as differenced files.

You should keep all of your source files, documentation files, JCL files, include files, ASCII data files, and COBOL master and text file pairs in this format. Although COBOL master and text file pairs are numbered files, you should still check these in as Nomask because:

- The line numbers in the COBOL master and text file pairs are normally fairly stable by design and use. They are seldom renumbered. As long as you do not renumber these files, you should initially check in these files with the Nomask option. You should avoid arbitrarily renumbering the COBOL master and text file pairs in your operation.
- This provides the only method of saving the same line numbers and efficiently storing different revisions of these files.

**To check in all of the source files in the source group with the default Nomask value:**

```
chkin @, ,source
```

**To check in all of the JCL files in the JCL group with the default Nomask value:**

```
chkin @, ,jcl
```

### **Checking In Numbered Files**

If line numbers are required and are insignificant in your files, you should issue the Chkin command with the Nummask option when you initially check in a file.

This option causes HP SRC to ignore the number field when it performs a record-by-record comparison of the revision being checked in with the latest revision in the HP SRC environment. The result is a Delta file containing "changed records" that reflect only the differences between the text or data portion of the records, not the differences between their number fields.

If you do not change a file other than to renumber it, HP SRC does not detect any differences when you check the file in. Note, however, that HP SRC does not maintain the original line numbers when you check the file out.

If line numbers are important and you do not want HP SRC to ignore them, use the Nomask option rather than the Nummask option. One example of files that require line numbers is COBOL source code. However, if you are not using the master/text file merge capability or the \$EDIT command, the line numbers in your source files are probably insignificant. If this is the case, you should check in these files with the Nummask option. HP SRC determines if the line numbers occur at the beginning or end of the record and checks the file in with the Nummask option.

If you issue the Chkout command for a numbered file initially checked in with the Nummask option, HP SRC renumbers the file, incrementing each line by one beginning with line one. Consequently, the original line numbers are not retained. Obviously, then, you would not want to check in the COBOL master/text file pair (where numbering is very significant) with the Nummask option.

You should not change file attributes unless it is necessary. For example, if you initially check in a numbered file with the default Nomask option, check out the same file and keep it as unnumbered (the file attribute is changed). When you check in the file later, HP SRC produces a large Delta file, since every record has been changed (numbered to unnumbered).

**To check in a file with the Nummask option, check it out for renumbering, then check it in again:**

1. Issue the following command to initially check in a file named Myfile:

```
chkin file=myfile, mask=nummask
```

2. Issue the following command to check out Myfile for modification:

```
chkout myfile
```

3. Use a text editor, such as EDIT/3000, to text in Myfile and modify it as shown:

```
EDITOR
/t myfile
/gather 2,5; gather 3,9
/l all
 1 The text of
 5 this file is
 9 unchanged.
/k myfile
/exit
```

4. Check in Myfile again by issuing the following command:

```
chkin file=myfile
```

HP SRC responds by displaying the following message and prompt:

```
MYFILE.GROUP.APACCT not changed. Create a new revision anyway? (y/n)
```

5. Reply yes (y) to the prompt.
6. Issue the following command to examine the file:

```
chkout myfile
```

7. Access the text editor. The file should appear as shown:

```
EDITOR
/t myfile
/l all
 1 The text of
 2 this file is
 3 unchanged.
/exit
```

### Converting Numbered Files to Unnumbered Files

If you currently implement line numbers in files only to keep track of changes made between different revisions, you should consider converting them to unnumbered files before checking them into the HP SRC environment. You can still track changes made in a revision, but even more efficiently. After converting numbered files to unnumbered files, you should check in the files with the Nomask option, which is the default for ASCII files.

You can use EDIT/3000 to convert numbered source files to unnumbered files as shown below. Lowercase indicates your input.

```
EDITOR
/t myfile
/k myfile,unn
PURGE OLD? y
/e
```

### Checking In Binary or Non-ASCII Files

HP SRC automatically checks in the following files as archived files and keeps full, separate copies for each checked-in revision:

- Binary files
- Non-ASCII files
- Fixed ASCII files with a record length greater than 256 bytes
- Files with user labels

To check these files in, simply issue the Chkin command without specifying a mask option. HP SRC responds by checking in the file with the default Fullmask option for these file types.

You can force other types of files to be archived, even though the HP SRC default is to store other file types as differenced files, by specifying the Fullmask option. For example, if you do not anticipate using a particular variable length record file very much, you could archive it in order to save disc space.

Delta files are created with a fixed record length equal to the largest record length of the file being checked in when differencing occurs. For variable length records, this is the length of the file's record length. If you check in a variable length file as archived (Fullmask), then the small "image" of the variable length record file is maintained. However, the saved disc space is negated if you subsequently issue Chkin commands that consume considerably more space by storing full images of the file over again instead of just the differences.

HP SRC keeps KSAM data and key files (i.e., COBOL copy libraries) as archived files, just as if you had specified Fullmask during the initial check-in. HP SRC processes KSAM files as one logical file. If you check in either a KSAM data file or a KSAMK key file, HP SRC checks in both the data file and key file under the name specified. You can then retrieve both files by issuing the Chkout command using the name given for the initial check-in.

**To check in and check out a copylib file containing the data file Copylib and the key file Copylibk:**

1. Issue the following command to check in both the Copylib and Copylibk files:

```
chkin copylib
```

2. Issue the following command to check out both Copylib and Copylibk files, noting that you must use the same name provided as the initial check-in name:

```
chkout copylib
```

**Using Lockwords**

If you have files with lockwords, HP SRC prompts you for the lockword when you check in the file. However, when you check out the file, you forfeit the lockword because HP SRC does not retain it. If you want to retain the lockword, you must manually reactivate it as shown below.

**To reactivate a lockword for the file Myfile after you have checked it in:**

1. Issue the following command to check in Myfile:

```
chkin myfile
```

MPE responds by prompting you for the lockword as shown:

```
LOCKWORD: myfile.MYGROUP.MYACCT?
```

2. Type *lockword* and press .
3. Add the description text or log text, if desired. After you add the text, MPE prompts you for the lockword again, as shown:

```
LOCKWORD: myfile.MYGROUP.MYACCT?
```

4. Type *lockword* and press .

5. Issue the following command:

```
chkout myfile
```

6. Issue the following command:

```
rename myfile,myfile/lockword
```

**Providing Description Text**

Generally, you provide text when checking in a file that best describes the file. If you are checking in several related files, you can expedite the process by checking in all of the files with generic description text. Later, you can replace this description text with something more descriptive using the Chgdesc command.

You could create a text file with generic description text and reference that file in the Chkin command as shown below:

```
chkin file=@s,desc=descfile
```

After checking in the files, you can replace the description text by issuing the Chgdesc command.

## Using HP SRC in the Development Cycle

Use the following development procedure as a guideline whenever you modify or create a file.

1. Issue the Chkout command to check out a file into the programmer's own group. This step is not necessary if you are creating a new file.

Do not attempt to check out a newly released file for modification until the development-to-production rollover is complete for the previous release. Programmers cannot check out files during the creation of a new release, because the files are locked by the builder. However, programmers can check out files and work on the files during the more frequent master builds.

2. Modify and compile the code. Perform unit-testing in the programmer's group.
3. Issue the Chkincopy command when the file is tested and ready for check-in. The file is then used for the master build, which integrates other programmer's tested code. The benefits of using Chkincopy, rather than Chkin are:

- a. Each programmer has the latest changes from other programmers if he or she needs to include these changes in the compile.
- b. Integration problems are detected sooner.
- c. The audit trail indicates more clearly how the integration problem arose. The audit would indicate the person who added the file, the file names, and when the files were modified. (This information would be provided by the expanded keywords contained in a standard ASCII file.)
- d. Master builds are more streamlined, because you do not have to issue the Copyrev command for all files, thereby eliminating the overhead of copying all files to the "ready" group. However, for integrity reasons, you would want to incur this overhead to include all the files while building a new release.

4. Perform master builds on a regular basis. It is recommended that you perform master builds during off hours in batch mode, and include a set of tests that execute upon successful completion of the build. These tests determine the success of the total integration. Programmers can then troubleshoot the following day.

Your particular project should determine the frequency of master builds. If your project is fairly inactive, nightly recompiles are unnecessary. You could perform master builds on a weekly basis instead. It is the responsibility of each programmer to integrate and fully test changes following builds.

Perform the following procedure to rebuild if the new build contains defective code:

1. Issue the LISTREV command with the date option set to the date of the last valid build (mm/dd/yy) to determine which files have changed, as in the following example:

```
listrev file=@,date=08/01/88-
```

2. Issue the Listdiff command to determine which changes occurred in a particular file between the time of the last valid build and the time that the defect was found, as in the following example. The example assumes that 1.5 is the last valid revision, 1.6 is the defective revision, and 1.6 is the head revision.

```
listdiff file=myfile3,rev=1.5-1.6
```

3. Check out the head revision of the newly determined defective source file to a programmer's development group as in the following example:

```
chkout myfile3, 1.6
```

4. Check in the fixed file as in the following example:

```
chkincopy myfile3
```

---

**Note**

Modifying the defective revision and creating a new revision maintains an audit trail of the modification. If you deleted the defective revision (1.6) and modified revision 1.5, the resulting file would be the same. However, the audit trail would not reflect the changes that caused the defect, the user who made the changes, or the corrective action taken.

---

5. Other programmers should continue to develop their old object modules and proceed as if a build had not been performed. When the defects are fixed, they can perform the rebuild again.

The programmers are responsible for copying over the latest object modules into their own groups from the latest build so they are always working on the most recent object modules.

## Building a Release

Once the development cycle is finished and the project is complete, you are now ready to build a release. A batch job (or several jobs) is recommended for this purpose. The following subsections provide information on these topics:

- Determining that the HP SRC environment is stable
- Performing the rollover by building a new release

### Determining the Stability of the Environment

Perform the following procedure to ensure that the HP SRC environment is secure and stable before you build a new release:

1. Issue the following command to find out if any files have locks:

```
listrev file=@,locks=locks
```

Note that it is important to issue this command for the entire HP SRC environment in order to find all locked files. This includes locks on JCL, data files, source files, program files and other such files. Any changes to these files could be critical to the success of the rollover.

If anyone has locked files, ask them to check in those files. If the programmer who has the file checked out is not available, you may have to either check in the file for



him/her or unlock the file as the master builder with Librarian capability. It is critical that you include all the files to build a release. However, during a less intensive master build, it is not necessary to check in all locked files.

2. Issue the Listdiff command to compare the checked out file and the revision of the file checked out. If the file has not changed, you may choose to unlock and purge the working copy for these types of files. If you attempt to check in such a file, HP SRC prompts you as to whether you want to proceed with the check-in or not. If you reply "no", then the file becomes unlocked and the working file is purged.
3. Issue the following command to list the revision tree to determine if there are any branches:

```
listtree @
```

4. Issue the following command for the file using the symbolic name of the branch:

```
listrev myfile,merged_ 1.10.1.2
```

If HP SRC finds this name, this indicates that someone has issued the Adddiff command to perform the merge. Otherwise, the builder must either merge in the changes, consciously proceed forward without the merge, or explicitly specify the head revision of the branch to be a part of the build instead of using the head revision of the trunk.

### Rolling Over the Code Into a Release

Use the following steps as a checklist while building the release:

1. Include the following commands in a batch job to build a release. Note that the @s, @p, @j are wildcard file accesses that are dependent upon naming conventions for source, program, and job files. Also note that Source, Prog, and JCL are example groups.

```
chkout file=@s,to=source,replace=replace  
chkout file=@p,to=prog,replace=replace  
chkout file=@j,to=jcl,replace=replace
```

2. Check out all the files to be part of the release under HP SRC control. By doing this, you can assign a symbolic name to a release and retrieve all the files needed to later reproduce the entire system. This ensures that the latest revision of all files is placed into the "ready" group, and prevents other programmers from checking out the files with a lock until after the rollover is complete.
3. Compile the programs as usual and proceed with a normal build in batch mode. This assures that all of the code is still functioning properly.
4. Assign a symbolic name that you can use for future cleanup, such as:

```
addsym file=@,sym=end_a.00.00
```

Note that the revision parameter is blank. It tags the latest revision with the symbolic name "end\_a.00.00" at the end of development based on the prior A.00.00 release. The release being built in this example is A.01.00. The symbolic name is used for the cleanup described in step 6.

5. Check in all files into the environment and assign a new release number as shown:

```
chkincopy file=@s,rev=3.0,from=source,to=source,&  
sym=a.01.00,log="release a.01.00",chg=all
```

```
chkincopy file=@j,rev=3.0,from=jcl,to=jcl,&  
sym=a.01.00,log="release a.01.00",chg=all
```

```
chkincopy file=@p,rev=3.0,from=prog,to=prog,&  
sym=a.01.00,log="release a.01.00",chg=all
```

The *rev* parameter shows that the revision number, 3.0, is being assigned to the files checked in. The assumption is that the current line of development proceeded in a 2.1, 2.2, . . . , 2.n progression. The goal is to make the head revision one revision level higher than the previous line of development and with a fix level of zero, so that the future development of all files begin at the same base revision.

The *from* parameter indicates the group where the file resides.

The *to* parameter indicates the group to which the file will be copied.

The *sym* parameter indicates the symbolic name for the release.

The *log* parameter provides the one-line log text "release a.01.00", indicating the release this revision represents.

The *all* parameter means to check in the files even if they are unchanged.

6. Delete the interim revisions used in the development process so that you leave only the major builds, such as 2.0 and 3.0, in the HP SRC environment. You can create a batch job that incorporates the Delrev command as shown:

```
delrev @, 2.1-end_a.00.00
```

This command deletes all intermediate development revisions from release A.00.00, which started at 2.0 (the first changes were in revision number 2.1), through the last revision before the A.01.00 build (revision number 3.0). This not only reduces disc space usage, but also eliminates the possibility of reverting to any interim revisions.

7. Move the software to production. Your use of HP SRC does not alter your current development-to-production procedures. Consequently, this means that you would typically assemble all of the files and either store them to tape (to restore to another system) or move them to a special production account.

## ADDITIONAL HP SRC MODELS

---

Chapter 2 examined the process involved in implementing a typical HP SRC environment. Your project team, however, may adopt other effective variations of the implementation model.

For instance, if members of your team need to make changes to the same set of software, each user can create a unique development path, called a branch. Or your team may want to partition a large project into separate teams, thereby necessitating separate HP SRC environments. Your team may also want to access an HP SRC account from a non-HP SRC account or access an HP SRC account from a different system.

This chapter provides procedures that enable you to implement these special applications.

---

### Using Branches For Concurrent File Development

The potential for file conflicts exists whenever several users work on the same source files concurrently. Users can minimize or eliminate this situation by creating their own development paths, called branches. Users can then merge branches into the main development path, called the trunk, and HP SRC flags the differences.

Branching would be effective for a typical situation in which:

1. An application has been distributed to customers while the project team is working on the next set of major enhancements.
2. A customer reports a critical defect that must be fixed immediately.
3. The planned enhancements require several months to complete.

The following procedures are recommended if your project team experiences a similar situation.

1. Enter the following Copyrev commands to copy the program files, message catalog files, data files, and other files not specified in this hypothetical example that comprise release A.01.00.

```
copyrev @p, a.01.00
copyrev @cat, a.01.00
copyrev @d, a.01.00
```

Since the Copyrev command copies a file to your logon group without a lock, other programmers are not locked out of the same files. Copying these files enables you to attempt to duplicate the customer problem using this version.

2. Use the Chkout command to check out files requiring modification. Check out these files as a branch. (Refer to chapter 3 of the *HP SRC User Guide* for information on

creating a branch.) You should create a branch from the released revision (A.01.00) of the files you need to modify.

3. Follow the steps recommended in the sections "Using HP SRC In The Development Cycle" and "Building A Release" in chapter 2.
4. Add an additional symbolic name (a.01.01) to all files as shown below, including the files you modified on the branch. This enables you to recreate the entire package when you are ready to send it to the customer.

```
addsym @s, a.01.00, a.01.01
```

```
addsym srcis, 1.5.1.2, a.01.01, replace
```

*Srcis* represents the fixed file in which two bug fix revisions were added to the base revision (1.5). The replace option is required to move the symbol a.01.01 to the branch revision from its previous assignment by the preceding ADDSYM command (with the wildcard file set @s).

5. Merge the branch into the main trunk to move the bug fixes to the planned, enhanced release. (Refer to the *HP SRC User Guide* for information about merging a branch.)

It is recommended that you add a special symbolic name with a standard prefix to the merged main branch revision, such as "merged\_ ". You should also do the same for the suffix, such as "1.2.1.3". The suffix number is based on the last revision number of the branch being merged. This enables you to manage branches more effectively as demonstrated in the "Building A Release" section of chapter 2.

If you want to merge revision 1.2.1.3 into head revision 1.4, for example, follow these steps:

1. Issue the following command to check out the head revision before merging:

```
chkout myfile
```

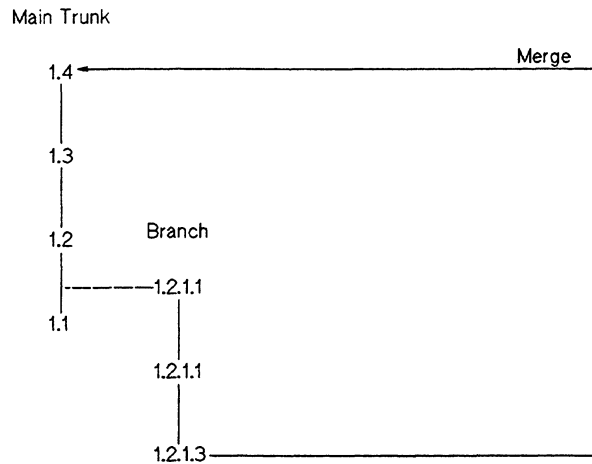
2. Issue the following command to merge the branch into the main trunk:

```
adddiff myfile, 1.2.1.1-1.2.1.3
```

3. After resolving merging conflicts, if any, issue the following command to create revision 1.5 with the symbolic name "merged\_ 1.2.1.3":

```
chkin file=myfile,sym=merged_1.2.1.3
```

This process enables you to determine if a branch has been merged into the trunk, thereby eliminating the necessity of repeating the task. This process also reveals where the changes were introduced in the trunk. Figure 3-1 graphically shows this process.



**Figure 3-1. Merging a Branch**

4. Issue the following command to delete the interim development branch revisions:

```
delrev myfile, 1.2.1.1-1.2.1.3
```

---

## Creating Separate Environments For Simultaneous Development

Occasionally, you may want to set up separate HP SRC environments when all users cannot work on the same set of files within a given HP SRC environment. For instance, a very large project may be partitioned into separate teams, enabling the teams to concentrate on different needs. Since the teams may often modify the same source files at the same time, a negative impact may result due to frequent branching and merging.

In this case, a viable alternative to the branching process described in the last section would be to:

- Set up separate HP SRC environments for each project team starting with a duplicate set of files in each environment. The HP SRC environments can reside on different machines.
- Periodically merge the changes from one environment to the other and vice versa.

The following sample procedures are based on a hypothetical situation involving two project teams. Team 1 works in an HP SRC environment from system 1, and team 2 works in another HP SRC environment from system 2. Both team 1 and team 2 work on the same set of files. A symbolic name marks the revision for the most current synchronization.

1. Team 1 - Issue the following command using *handoff1* as a symbolic name for system 1 that you can use later to identify the files moved to system 2:

```
addsym file=@,sym=handoff1
```

2. Team 1 - Issue the following command to copy revisions to the appropriate groups, depending on the files.

```
copyrev @
```

You probably have already have set up a Prog group, a Source group, a JCL group, etc., as previously discussed. You must issue separate Copyrev commands to send the files to the appropriate groups.

3. Team 1 - Issue the following command to store the standard working files from system 1 that you just copied with the Copyrev command. (These are not the HP SRC Stat and Delta files.)

```
store @
```

4. Team 2 - Issue the following command to restore the standard working files from system 1 to system 2.

```
restore @
```

You may want to initially retain the same group and account structure. If the systems are connected to a network, you can combine this step and the previous step with DSCOPY.

5. Team 2 - Issue the following command to check in all of these files and assign the same symbolic name as team 1.

```
chkin file=@,sym=handoff1
```

Perform the following additional steps for subsequent handoffs. Before proceeding, team 2 should have a stable HP SRC environment with no outstanding locks.

1. Team 1 - Issue the following command to determine the date of the last hand-off. You can use **Ctrl Y** after a file is displayed to stop processing.

```
listrev @, handoff1
```

2. Team 1 - Issue the following command to list only the revisions of files that have changed from the release date obtained from step 1, which is 02/01/88.

```
listrev file=@,date=02/01/88-
```

Your team must move these changed files, as well as newly added files, to system 2. Do not transfer unchanged files.

3. Team 1 - Issue the Copyrev and Addsym commands for each file displayed in the Listrev output. You may want to copy the files to a separate group to simplify the STORE command process in the next step. Adding the symbolic name at this time makes it easier to identify changed files for later handoffs.

```
copyrev file1
addsym file1, handoff2
copyrev file2
addsym file2, handoff2
```

```
.
```

4. Team 1 - Issue the following command to store the changed files to tape that you just copied with the Copyrev command.

```
store @
```

5. Team 2 - Issue the following command to restore the changed files to a separate, empty group.

```
restore 0
```

6. Team 2 - Issue the following series of Listrev commands to check whether the head revision in the team 2 environment of the files just restored have the symbolic name, handoff1, from the previous hand-off.

```
listrev file1, handoff1-  
listrev file2, handoff1-
```

```
listrev filen,handoff1-
```

**If only one revision for a file appears, proceed to step a. If more than one revision appears, go to step b. If an error message appears stating that the file does not exist, go to step c.**

- a. When Listrev displays only one revision for a file (the "handoff1" revision), this indicates that the file is the head revision. Team 2 only needs to check in the new handoff from team 1 and copy it to the ready group. Repeat the following two commands for each file:

```
lock filex  
chkincopy file=filex,sym=handoff2
```

- b. When Listrev displays more than one revision, merging is necessary because both team 1 and team 2 have made changes to the file. Merge the changes beginning with the first revision that team 2 created since handoff1 and ending with the head revision. If the first revision after handoff1 is also the head revision, then your revision range is that one revision number.

After merging files, resolve any conflicts, if any, using a text editor, then check in the files. Repeat the following sequence for each file:

```
lock filey  
adddiff filey, 'head'
```

or

```
adddiff filey, 'handoff1+1'-'head'  
chkincopy file=filey,sym=handoff2
```

where 'head' represents the head revision number and 'handoff1+1' is the next revision number greater than handoff1.

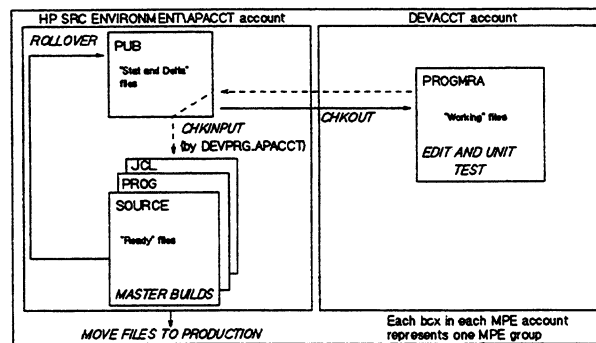
- c. When Listrev displays an error message stating that the file does not exist in the HP SRC environment, then the file must be a new file that team 1 added. If this situation arises, check in each file as follows:

```
chkincopy file=filez,sym=handoff2
```

## Accessing an HP SRC Environment From Other Accounts

Occasionally, users from other accounts may need to work on files within a given HP SRC environment. These users could check out HP SRC files, but could not check them back in from a non HP SRC account. However, you could alter the account structure and set up the appropriate HP SRC UDC and access list to enable a user outside the environment to check files out of the environment.

Figure 3-2 shows a user from the DEVACCT account accessing files from the APACCT account within the HP SRC environment.



**Figure 3-2. Accessing an HP SRC Account From Other Accounts**

The following procedures provide a method of implementing the process shown in figure 3-2. After performing this procedure, you can follow the development cycle described in chapter 2.

1. Set the read access to *any* for the APACCT account and the PUB group where the Delta and Stat files reside. Also set the read access to *any* for the DEVACCT account and the PROGMRA group.

If system security restrictions do not enable you to lower the security requirements, then you can selectively use the MPE Release command.

2. Copy the HP SRC UDC file from the APACCT account to the DEVACCT account. Make sure that the *stat* parameter is fully qualified by the correct account name (such as PUB.APACCT).
3. Issue the MPE Setcatalog command to set up the UDC in the DEVACCT account.
4. Issue the Adduser command and add two user names to the HP SRC user list for the user(s) residing in the DEVACCT account. Add user DEVPGR.DEVACCT with Author1 capability, then add user DEVPGR.APACCT with Librarian capability.

The user name DEVPGR.DEVACCT enables a user to check out files from inside the development account. Author1 capability is sufficient for this user because he or she is not permitted to check in files across account boundaries. Author1 capability permits the use of the Chkout and Copyrev commands, but not the Chkin command.

The user name DEVPGR.APACCT enables users to check their own files back in. The unique user name will ensure that all of the auditing information about the user from a different account is recorded properly in the HP SRC environment. Librarian



capability is required for this user name in order to check in the files that were originally checked out using a different user name.

After performing the preceding procedure, you can now check in and check out files across account boundaries as shown in the following example. You first log on to the DEVACCT account and then check out *myfile* from the APPACCT account. When the file is ready to be checked in, you log on to the APACCT account and check in the file.

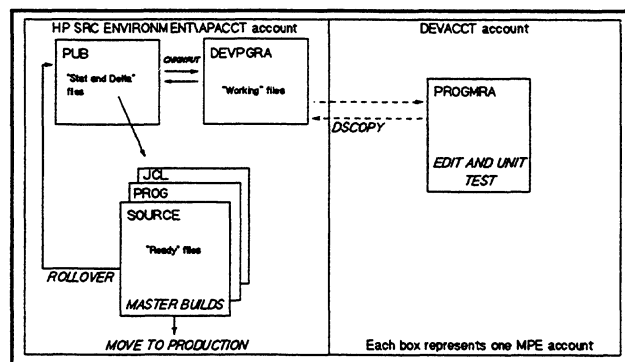
```
:hello devpgr.devacct,progma
:chkout myfile
:hello devpgr.apacct
:chkin myfile,,progma.devacct
```

---

## Accessing an HP SRC Account From Other Systems

Users logged onto a system outside an HP SRC account may occasionally need to access files from that HP SRC account. Users from this other system cannot check in or check out files directly from the HP SRC environment. They can, however, obtain copies of the files using the MPE DSCOPY command, assuming that networking services are available.

Figure 3-3 shows a user with a home account of DEVACCT on system B accessing files from the HP SRC APACCT account on system A to work on an application project.



**Figure 3-3. Accessing an HP SRC Account From Another System**

The following procedures provide a method of implementing the process shown in figure 3-3. After performing this procedure, you can follow the development cycle described in chapter 2.

1. Log on to system B:

```
hello devpgr.devacct,progma
```

2. Open the DSLINE to system A:

```
dsline systema
```

3. Log on to system A using the unique remote user name:

`remote hello devpgr.apacct,progma`

4. Obtain a report that lists all files that have changed since the last update. To find out which files you should copy to system B, issue the Listrev command for a date range beginning with the last date for a system B update and ending with the current date:

`remote listrev file=@,date=MM/DD/YY-`

If you want to copy any of the files, proceed to the next step. If you want to check out any of the files to make modifications, skip to step 7.

5. Copy the first changed file *n* in system A. Repeat for each changed file to be copied.

`remote copyrev filen`

6. Copy each of the changed files from system A to system B:

`dscopy filen.source,systema to filen.source`

Note that in order to obtain the latest working files from system A, you must periodically DSCOPY (or STORE and then RESTORE) the entire set of working files from system A to system B:

7. Check out the first changed file *n* in system A. Repeat for each changed file to be checked out.

`remote chkout filen`

8. Copy each of the changed files from system A to system B.

`dscopy filen.source,systema to filen.source`

9. Purge *filen* on system A:

`remote purge filen`

10. Make appropriate changes to the file(s) by editing, compiling, and debugging as necessary.

11. Copy *filen* to system A after the file is stable and ready to check in:

`dscopy filen to filen, systema`

12. Check in *filen* to the system A HP SRC environment:

`remote chkin filen`

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614, Higashi-Shiokoji-cho  
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**KYOTO**, 600  
Tel: 075-343-0921  
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Yokogawa-Hewlett-Packard Ltd.  
Mito Mitsui Bldg.  
1-4-73, Sanno-maru  
**MITO**, Ibaraki 310  
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Yokogawa-Hewlett-Packard Ltd.  
Corso Svizzera, 185  
Meiji-Seimei Kokubun Bldg.  
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**MIYAGI**, 980  
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Yokogawa-Hewlett-Packard Ltd.  
Gohda Bldg. 2F  
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**NAGANO**, 394  
Tel: (0266) 23 0851  
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Yokogawa-Hewlett-Packard Ltd.  
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Yokogawa-Hewlett-Packard Ltd.  
1-27-15, Yabe  
**SAGAMIHARA** Kanagawa, 229  
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Hamamtsu Motoshiro-Cho Daichi  
Seimei Bldg 219-21, Motoshiro-Cho  
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**SHIZUOKA, 430**  
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Yokogawa-Hewlett-Packard Ltd.  
Shinjuku Daiichi Seimei Bldg.  
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Yokogawa Hewlett-Packard Ltd.  
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Hachioji-shi, **TOKYO, 192**  
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C.E

Yokogawa-Hewlett-Packard Ltd.  
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Suginami-ku **TOKYO 168**  
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Telex: 232-2024 YHPTOK  
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**TOKYO, 163**  
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Telex: J27584  
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**TOKYO, 180**  
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Telex: 02822-421 YEW MTK J  
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Scientific and Medical Supplies Co.  
P.O. Box 1387

**AMMAN**  
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Telex: 21456 SABCO JO  
C.E.M.P

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ADCOM Ltd., Inc., Kenya  
P.O. Box 30070

**NAIROBI**  
Tel: 331955  
Telex: 22639  
E.M

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Cable: VISCOUNT  
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Gulf Computing Systems  
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Tel: 435969  
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Photo & Cine Equipment  
P.O. Box 270  
**SAFAT**  
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Telex: 22247 MATIN KT  
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W.J. Towell Computer Services  
P.O. Box 5897  
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Telex: 30336 TOWELL KT  
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Chammas Building  
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**BEIRUT**  
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Telex: 70904 PROMAL MA  
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Notabile Rd.  
**MRIENEL**  
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Telex: Media MW 649  
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**PORT LOUIS**  
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Telex: 4296  
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Circuito del Mezon No. 186 Desp. 6  
**COL DEL PRADO - 76030 Qro.**  
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Microcomputadoras  
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66220 **MONTERREY, Nuevo Leon**  
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Rio Orinoco #171 Oriente  
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Colonia Del Valle  
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Telex: 483164

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Northrop Instruments & Systems Ltd.  
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**MUSCAT/SULTANATE OF OMAN**  
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Telex: 3489 BROKER MB MUSCAT  
P

Suhail & Saud Bahwan  
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**MUSCAT/SULTANATE OF OMAN**  
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Intac LLC  
P.O. Box 9196  
**MINA AL FAHAL/SULTANATE OF OMAN**  
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Telex: 3865 Tawoos On  
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Mushko & Company Ltd.  
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**ISLAMABAD**  
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Cable: FEMUS Islamabad  
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Electronico Balboa, S.A.  
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Telex: 368 3483 ELECTRON PG  
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Cia Electro Médica S.A.  
Los Flamencos 145, Ofc. 301/2  
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CM,E,M,P  
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Avenida Republica de Panama 3534  
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Tel: 9-011-511-4-229332/413984/  
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## PHILIPPINES

The Online Advanced Systems Corp.  
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Nasser Trading & Contracting  
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B.P. 305  
**DAKAR**  
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Moneger Distribution S.A.  
1, Rue Parent  
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**DAKAR**  
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Système Service Conseil (SSC)  
14, Avenue du Parachois  
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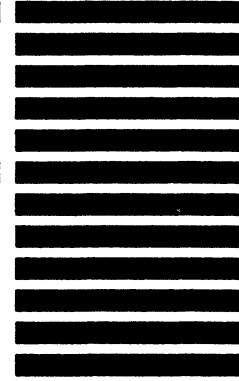
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