ITS Products

for Model 204

Installation Guide

SoftSpy Version 3.0C
MUSE Version 1.2C
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Chapter 1: Introduction

This manual provides installation instructions for the following ITS products:

- SoftSpy for Model 204, Version 3.0C
- MUSE for Model 204, Version 1.2C

These product versions are distributed with and support Version 4.1.1 of Model 204.

Installation of ITS products should be done by the organization responsible for the installation and maintenance of Model 204. When performing the installation, you should have a copy of the Model 204 4.1.1 *Installation Guide*. You should review all relevant chapters of this manual before proceeding with the installation.

When you have completed the installation instructions detailed in this document both SoftSpy Version 3.0C and MUSE Version 1.2C will be installed. If you wish to install ITS products in additional ONLINE or BATCH204 jobs, refer to the *Additional Installations* chapter.

Overview of Installation

ITS products consist of Model 204 nucleus extensions and Model 204 User Language procedures. The Model 204 4.1.1 installation process automatically includes the nucleus extensions for ITS products. The ITS products installation process installs the User Language procedures, and modifies your Model 204 systems to make ITS products available for use.

This installation guide is organized into chapters that provide instructions for each operating system, followed by chapters that provide instructions common to all operating systems.

The operating system specific chapters (Chapter 2: MVS, Chapter 3: VM, or Chapter 4: VSE) document:

- Prerequisite Model 204 installation steps
- Allocation of ITS product files
- Required DD/DLBL/FILEDEF statements for ITS product files

Common installation chapters include:

- Chapter 5: Update CCAIN
- Chapter 6: Online Installation Steps
- Chapter 7: Verify the Installation

Chapter 2: MVS Installation

This chapter describes the MVS specific portion of the ITS product installation process. This part of the installation process must be completed before the installation steps described in chapters 5 to 7 that apply to all operating system environments.

Model 204 Installation

The process outlined below assumes that Model 204 was installed according to the *Model 204 MVS Installation Guide* for version 4.1.1. Prior to completing the installation of ITS products it is necessary to complete several Model 204 installation steps:

- Specify install or reinstall SoftSpy in INSPARMS
- Install Model 204 4.1.1 nucleus
- Install Model 204 dictionary

If Model 204 4.1.1 has been installed and install or reinstall Softspy was not specified in INSPARMS then INSPARMS may be edited to indicate that only SoftSpy will be installed or reinstalled. The following Model 204 installation jobs will need to be rerun:

- GENJCL
- M204ALOC
- TAPEUNLD

Backup SPYDATA

If you are upgrading from a previous version of SoftSpy it is strongly suggested that you make a backup copy of the SPYDATA file before proceeding. The upgrade process modifies the SPYDATA file, so a backup copy is required if you need to revert to the previous version.

Modify ONLINE Startup JCL

If you are installing ITS products for the first time then add DD statements for the SPYDUMP, SPYPROC, SPYDATA, SPYTEMP, AND ITSAUTH datasets to your ONLINE startup JCL. Samples of these are:

```
//SPYDUMP DD DSN=SYSM.M204.R30.SPYPROC.DUMP,DISP=SHR
//SPYPROC DD DSN=SYSM.M204.R30.SPYPROC.M204,DISP=SHR
//SPYDATA DD DSN=SYSM.M204.SPYDATA.M204,DISP=SHR
//SPYTEMP DD DSN=SYSM.M204.SPYTEMP.M204,DISP=SHR
//ITSAUTH DD DSN=SYSM.M204.ITSAUTH.M204,DISP=SHR
```

If you are upgrading from a previous version of ITS products then you only need to add DD statements for SPYDUMP and SPYPROC. The DD statements for SPYDATA, SPYTEMP, and ITSAUTH should already be present.

Make sure that the SYSOPT (system options) X'04' bit is off. This setting indicates that Model 204 data definition commands can only be executed from within the File Management Facility of Dictionary 204. This facility is not used to create and format the SPYDATA and SPYTEMP files and their fields as documented in the *Online Installation Steps* chapter of this manual. Normal SoftSpy operation is not affected by the SYSOPT X'04' bit setting.

Note that the SPYDUMP DD is only necessary to perform the installation and may removed afterward.

Chapter 3: VM Installation

This chapter describes the VM specific portion of the ITS product installation process. This part of the installation process must be completed before the installation steps described in chapters 5 to 7 that apply to all operating system environments.

Model 204 Installation

Installation tasks for SoftSpy should be done on the CMS id normally used for the installation and maintenance of Model 204, typically MAINT204. The process outlined below assumes that Model 204 was installed according to the *Model 204 VM Installation Guide* for version 4.1.1. Prior to completing the SoftSpy installation instructions below it is necessary to complete several Model 204 installation steps:

- Install Model 204 4.1.1 nucleus
- Install Model 204 dictionary

Backup SPYDATA

If you are upgrading from a previous version of SoftSpy it is strongly suggested that you make a backup copy of the SPYDATA file before proceeding. The upgrade process modifies the SPYDATA file, so a backup copy is required if you need to revert to the previous version.

Allocate the ITS Databases and ITSAUTH Dataset

If the SPYPROC, SPYTEMP, and SPYDATA database files will reside on an OS format disk, they should be allocated at this time. To allocate SoftSpy files on OS format disks type EXEC SSPYFDEF ALOCSSPY where SSPYFDEF is an exec on MAINT 193 disk. This exec will need to be edited to conform to your disk naming and file placement conventions.

If you are upgrading from a previous version of SoftSpy, only the SPYPROC database file needs to be allocated. The following table shows space requirements:

Database Name	Number of 6184 byte pages	Number of blocks on FBA devices
SPYPROC	400	5000
SPYDATA	150	2000
SPYTEMP	100	1500

Next, allocate the ITSAUTH dataset. This is a sequential file that contains authorization data and must be allocated to any job that uses ITS products with a DD name of ITSAUTH. It consists of fixed length 256 byte records. If the ITSAUTH stream will be on a CMS mini-disk, it does not have to be pre-allocated. On an OS format minidisk, allocate 8 blocks on FBA devices.

Modify ONLINE Startup EXEC

If you are installing ITS products for the first time then add FILEDEFs for the SPYDUMP, SPYPROC, SPYDATA, SPYTEMP, and ITSAUTH datasets to your ONLINE startup JCL. Samples of these are:

```
FILEDEF SPYPROC DISK SPYPROC DBV300 filemode
FILEDEF SPYDUMP DISK SPYPROC DUMP *
FILEDEF SPYDATA DISK SPYDATA DATABASE filemode
FILEDEF SPYTEMP DISK SPYTEMP DATABASE filemode
FILEDEF ITSAUTH DISK ITSAUTH DATA filemode
```

If the ITS files are on OS format disks, then FILEDEFs of the following format should be used:

```
FILEDEF SPYPROC filemode DSN SPYPROC DBV300 M204
FILEDEF SPYDUMP DISK SPYPROC DUMP *
FILEDEF SPYDATA filemode DSN SPYDATA M204
FILEDEF SPYTEMP filemode DSN SPYTEMP M204
FILEDEF ITSAUTH filemode DSN ITSAUTH DATA
```

If you are upgrading from a previous version of ITS products then you only need to add FILEDEFs for SPYDUMP and SPYPROC. The FILEDEFs for SPYDATA, SPYTEMP, and ITSAUTH should already be present.

Make sure that the SYSOPT (system options) X'04' bit is off. This setting indicates that Model 204 data definition commands can only be executed from within the File Management Facility of Dictionary 204. This facility is not used to create and format the SPYDATA and SPYTEMP files and their fields as documented in the *Online Installation Steps* chapter of this manual. Normal SoftSpy operation is not affected by the SYSOPT X'04' bit setting.

Note that the SPYDUMP FILEDEF is only necessary to perform the installation and may removed afterward.

Chapter 4: VSE Installation

This chapter describes the VSE specific portion of the ITS product installation process. This part of the installation process must be completed before the installation steps described in chapters 5 to 7 that apply to all operating system environments.

Model 204 Installation

The process outlined below assumes that Model 204 was installed according to the *Model 204 VSE Installation Guide* for version 4.1.1. Prior to completing the ITS products installation instructions below it is necessary to complete several Model 204 installation steps:

- Install Model 204 4.1.1 nucleus
- Install Model 204 dictionary

Allocate the ITS Databases and ITSAUTH Dataset

If upgrading from a prior version of ITS products execute the SPYRINST job from M204.JCLLIB library created during Model 204 4.1.1 installation. This job will unload SPYPROC dump file from tape to disk and allocate the new SPYPROC file. It is recommended that you backup SPYDATA prior to performing an upgrade install. This will facilitate restoring the previous release of SoftSpy.

If performing an ITS product installation for the first time execute the SPYINST job from M204.JCLLIB library created during M204 4.1.1 installation. This job will unload SPYPROC dump file from tape to disk and allocate SPYPROC, SPYDATA, SPYTEMP, and ITSAUTH files

Backup SPYDATA

If you are upgrading from a previous version of SoftSpy it is strongly suggested that you make a backup copy of the SPYDATA file before proceeding. The upgrade process modifies the SPYDATA file, so a backup copy is required if you need to revert to the previous version.

Modify ONLINE Startup JCL

If you are installing ITS products for the first time then add DLBL, EXTENT and ASSGN statements for the SPYDUMP, SPYPROC, SPYDATA, SPYTEMP, AND ITSAUTH datasets to your ONLINE startup JCL. Samples of these are:

```
// DLBL SPYPROC,'M204.SOFTSPY.R30.SPYPROC',,DA
// EXTENT SYS021,volser
// ASSGN SYS021,DISK,VOL=volser,SHR
// DLBL SPYDATA,'M204.SOFTSPY.SPYDATA',,DA
// EXTENT SYS021,volser
// ASSGN SYS021,DISK,VOL=volser,SHR
// DLBL SPYTEMP,'M204.SOFTSPY.SPYTEMP',,DA
// EXTENT SYS021,volser
// ASSGN SYS021,DISK,VOL=volser,SHR
// DLBL SPYDUMP,'M204.SOFTSPY.R30.SPYPROC.DUMP',,DA
// EXTENT SYS021,volser
```

```
// ASSGN SYS021,DISK,VOL=volser,SHR
// DLBL ITSAUTH,'M204.SOFTSPY.ITSAUTH',,SD
// EXTENT SYS021,volser
// ASSGN SYS021,DISK,VOL=volser,SHR
```

If you are upgrading from a previous version of ITS products then you only need to add DLBL, EXTENT and ASSGN statements for SPYDUMP and SPYPROC. The DLBL, EXTENT and ASSGN statements for SPYDATA, SPYTEMP, and ITSAUTH should already be present.

Make sure that the SYSOPT (system options) X'04' bit is off. This setting indicates that Model 204 data definition commands can only be executed from within the File Management Facility of Dictionary 204. This facility is not used to create and format the SPYDATA and SPYTEMP files and their fields as documented in the *Online Installation Steps* chapter of this manual. Normal SoftSpy operation is not affected by the SYSOPT X'04' bit setting.

Note that the SPYDUMP DD is only necessary to perform the installation and may removed afterward.

Chapter 5: Update CCAIN

This chapter describes the changes required to the CCAIN input stream to install and use ITS products. The following changes may be needed:

- ! Add IODEV=55 threads
- ! Remove SoftSpy IODEV=3 threads
- ! Adjust the NUSERS parameter
- ! Ensure a large enough server is available
- ! Adjust the LENQTBL parameter
- ! Adjust the SPCORE parameter for SoftSpy operation
- ! Adjust the SPCORE parameter for MUSE operation

Add IODEV=55 Threads

Every concurrent end-user SoftSpy session requires a separate SoftSpy server thread. Each IODEV=55 statement you add to the CCAIN input stream will create a distinct SoftSpy server thread. The following example illustrates the lines to be added to the CCAIN stream to create three SoftSpy servers.

```
IODEV=55,AUTOSYS=C'',LIBUFF=255,LOBUFF=255,NORQS=5
IODEV=55,AUTOSYS=C'',LIBUFF=255,LOBUFF=255,NORQS=5
IODEV=55,AUTOSYS=C'',LIBUFF=255,LOBUFF=255,NORQS=5
```

The settings shown for the AUTOSYS and NORQS parameter are required for SoftSpy to work properly. The settings shown for LIBUFF and LOBUFF are necessary to minimize SoftSpy server table usage.

In order to use SoftSpy from a particular full screen thread, the size of the output page buffer (LOUTPB) must match the size of the output page buffer of an available SoftSpy server thread. If you use different values for LOUTPB for different full screen threads, then you should create SoftSpy servers for each distinct value of LOUTPB.

Remove SoftSpy IODEV=3 Threads

If you are upgrading from SoftSpy version 2.1 or prior you must remove SoftSpy IODEV=3 threads. SoftSpy versions 2.1 and prior used IODEV=3 threads rather than IODEV=55 threads for SoftSpy servers. You should remove all IODEV=3 threads that start SoftSpy servers from CCAIN because they will prevent subsequent installation steps from completing successfully.

Adjust the NUSERS Parameter

The NUSERS parameter needs to be increased by the number of IODEV=55 threads you have added to run SoftSpy servers and decreased by the number of IODEV=3 threads removed. An increase in the NUSERS parameter may require a change to the size of the server dataset. See the Model 204 *System Administration Guide* for a complete discussion of server datasets.

Ensure a Large Enough Server is Available

SoftSpy servers normally use a Model 204 SERVSIZE of 280,000. However, there are cases where a larger server is required. This is because certain server tables whose sizes cannot be reset by SoftSpy contribute to overall server size requirements. If the sum of the size of RTBL, LOUTPB, and LFTBL exceeds 8,000 then a larger server will be required. The server size requirement is increased beyond 280,000 by the amount that the specified sum exceeds 8,000. Make sure that at least one in-core server is large enough to support this requirement.

Instructions for setting LOUTPB are contained in the *Add IODEV=55 Threads* section in this chapter. SoftSpy automatically sets LFTBL to NGROUP*4 for each of the IODEV=55 threads. The size of RTBL depends on the values of the NGROUP, NFILES, and NRMTFILE parameters. The size of RTBL is usually the most important influence on increased server size requirements.

If the parallel query option of Model 204 is being used then the size of RTBL is:

(NGROUP + 12) * (NFILES + NRMTFILE + 3) + NRMTFILE + 1.

Otherwise, the size of RTBL is:

(NGROUP + 12) * (NFILES + 3).

In either case, the size of RTBL is rounded up to the next higher multiple of eight.

In addition, two of the DBCS environments require an even larger server size:

! DBCSENV=3 requires a 286,000-byte server
! DBCSENV=4 requires a 294,000-byte server

Adjust the LENQTBL Parameter

When SoftSpy servers are run the LENQTBL parameter may need to be increased. The size of the enqueue table is based on the product of NUSERS and LENQTBL. When NUSERS is small the value of LENQTBL may need to be set to at least 500.

Adjust the SPCORE Parameter for SoftSpy Operation

The SPCORE parameter specifies the amount of storage to be set aside below the 16M line for operating system and run-time dynamic storage requests. The value of this parameter may need to be increased to accommodate the run time requirements of SoftSpy. The storage required can be calculated with the formulas:

$$a = 1380 + (12 * NUSERS)$$

$$b = (12484 * n) + \sum_{i=1}^{n} LOUTPB_i$$

where ***n*** is the number of threads running a SoftSpy Server, and $LOUTPB_i$ is the size of the output page buffer for the given server thread.

In a non-XA environment, the additional SPCORE requirement is the sum of *a* and *b*.

In an XA environment, the additional SPCORE requirement is *a*. The value derived for *b* represents the amount of storage that is allocated above the 16M line and does not impact SPCORE.

To maintain the number of disk buffers, an increase in MVS region size, CMS virtual machine size, or VSE partition size may be necessary. If increasing the region size is not viable, you can either reduce the number of disk buffers or the number of in-memory servers.

Adjust the SPCORE Parameter for MUSE Operation

When MUSE is in use, additional storage is required. In non-XA environments, this is an additional SPCORE requirement. In XA environments, although SPCORE is not affected, region (or virtual machine) size may be impacted.

The amount of storage needed for MUSE is computed by summing the storage requirements of each simultaneous user of MUSE. For each user, the amount of storage needed by MUSE is:

***muse_storage* = *header_storage* + *max_muse_streams* * (*header_storage* + 1088)**

where

***header_storage* = 110 + (MAXHDR + MAXTRL) * (HTLEN + 5)**

and *max_muse_streams* is the maximum number of MUSE output streams (created by MUSE OPEN(C) or USE) that will be open at any given time. For example, if

***max_muse_streams* = 2**
MAXHDR = MAXTRL = 5
HTLEN = 132

then

***header_storage* = 110 + (5 + 5) * (132 + 5) = 1480**
***muse_storage* = 1480 + 2 * (1480 + 1088) = 6616**

Chapter 6: Online Installation Steps

This chapter describes ITS product installation steps that are performed online from within Model 204. These steps must be performed using a Model 204 Version 4.1.1 ONLINE that includes the SPYDUMP, SPYPROC, SPYDATA, SPYTEMP, and ITSAUTH datasets described in the appropriate operating system specific chapter. The CCAIN input stream for the ONLINE must have been updated as described in the *Update CCAIN* chapter. The following steps must be performed:

- Log on to Model 204
- Stop the SoftSpy subsystem
- Create and restore the SPYPROC file
- Run the INSTALL.SOFTSPY procedure
- Set passwords for the SPYPROC and SPYDATA files
- Set the authorized product configuration

Log on to Model 204

Log on to Model 204 using an account with system manager privileges.

```
LOGON accountname
password
```

Stop the SoftSpy Subsystem

If SoftSpy has been previously installed, all use of SoftSpy must be terminated before you proceed. This is accomplished by issuing the Model 204 command:

```
STOP SUBSYSTEM SOFTSPY
```

Create and Restore the SPYPROC File

Create and restore the SPYPROC file using the commands below:

```
CREATE FILE SPYPROC
END
OPEN FILE SPYPROC
IN SPYPROC INITIALIZE
RESTORE 128 FROM SPYDUMP
```

Run the INSTALL.SOFTSPY Procedure

The creation of the SoftSpy subsystem, and the formatting of SPYTEMP and SPYDATA is performed by the INSTALL.SOFTSPY procedure.

To begin the process, enter the following commands:

```
OPEN SPYPROC
INCLUDE INSTALL.SOFTSPY
```

This procedure will prompt you for the information it needs to create the subsystem and to initialize or upgrade the SPYDATA file. The prompts and their appropriate responses are:

```
$$Is SOFTSPY currently installed on this ONLINE (Y/N)?
```

If SoftSpy has previously been installed, and you wish to perform an upgrade style installation of the new version, respond Y. This will cause access control lists and macros from the previous version contained in the SPYDATA file to be preserved. Otherwise, respond N.

```
$$Enter READ password for SPYDATA:
```

This prompt only appears if you are performing an upgrade style installation. Enter a read password (one with at least X'8041' privdef privileges) for the SPYDATA file. If the SPYDATA file cannot be opened with read access using the specified password, the installation process will terminate with an error message.

```
$$Enter READ/WRITE password for CCASYS:
```

Enter a read/write password (one with at least X'00C1' privdef privileges) for the CCASYS file. This allows the procedure to perform all required subsystem management for the SoftSpy subsystem. If the CCASYS file cannot be opened with read/write access, the installation process will terminate with an error message.

```
$$A subsystem named SOFTSPY already exists.  Replace (Y/N)?
```

This prompt appears if a subsystem with the name SOFTSPY is defined that is not the ITS SoftSpy subsystem. If you want to replace the existing SOFTSPY subsystem with the ITS SoftSpy subsystem, respond Y. If not, respond N. A response of N will terminate the installation process.

```
$$Enter an Administrator User ID.  Press <ENTER> when finished.
```

Enter the Model 204 account of anyone who is to be given Model 204 ADMIN SCLASS privileges for the SoftSpy subsystem. Users added will supplement those added by previous installs of SoftSpy. The users in this SCLASS will be able to use the SoftSpy EDIT CONFIG command. Refer to the *SoftSpy Reference Manual* for a discussion of EDIT CONFIG. Subsequent changes to the list of users with ADMIN privileges for the subsystem must be made via the Model 204 Subsystem Management Facility. Refer to the Model 204 *System Manager's Guide* for further information.

The user id will be checked for compliance with Model 204 conventions, but will not be validated for existence in the CCASTAT file. The User ID prompt will appear repeatedly until you respond by pressing the enter key without entering a User ID. The Model 204 account of the user who is running this procedure is included in the list automatically.

If you are performing an upgrade style installation, you may receive the prompt:

```
Macro macro_identifier already exists.

1. Replace with NEW version.
2. Discard NEW version.
3. Rename NEW version.
4. Rename OLD version.

$$Please choose an option:
```

This prompt is issued when a SoftSpy macro being installed has the same name as an existing macro and the new macro is different than the existing macro. Enter 1 if you want the new version to replace the existing version. Enter 2 if you want to discard the new version. Enter 3 to save the new version under a different name. Enter 4 to rename the existing macro and save the new version with the name displayed. An invalid response will cause the prompt to be redisplayed.

```
$$Please enter new name or press <ENTER> to accept: "macro_identifier_BAK"
```

If you select option 3 or 4, you will be prompted for a new name for the new or old version of the macro, respectively. You may respond with any valid SoftSpy macro name or press ENTER to accept the suggested name *macro_identifier*_BAK. If *macro_identifier*_BAK exists, the suggested name will have additional _BAK strings appended to it until a unique name can be presented.

Set Passwords for the SPYPROC and SPYDATA Files

The SPYPROC, SPYDATA, and SPYTEMP files are set to private at the end of the successful execution of the INSTALL.SOFTSPY procedure. A read password for the SPYDATA file will be required to install future upgrades to SoftSpy, and a procedure execution password for the SPYPROC file will be required if you need to reinitialize the SPYTEMP file. It is recommended that you assign passwords for these files. The Model 204 LOGCTL command is used to add passwords to CCASTAT as shown in the following examples:

```
LOGCTL A :SPYDATA
READ,X'8441'
<ENTER>
LOGCTL A :SPYPROC
EXECUTE,X'8021'
<ENTER>
```

In the above example, the password "READ" is assigned as the read password for the SPYDATA file and the password "EXECUTE" is assigned as the procedure execution password for the SPYPROC file. The <ENTER> notation indicates the command expects further input, and the enter key is pressed to take the default. Please refer to the Model 204 *Command Reference Manual* for a complete discussion of the syntax of the LOGCTL command and its parameters.

Set the Authorized Product Configuration

Enter the following command to invoke the ITS product configuration editor:

```
SPY EDIT CONFIG
```

The editor should display a screen like the one shown in Figure 1.

Figure 1: EDIT CONFIG Definition Screen

```
1 of 2               SoftSpy for Model 204               01 SEP 1998 12:00:00
EDIT CONFIG
================================================================================

Square Brackets can be displayed on terminals (Y OR N) Y

Privilege          Access Control List Name
  M204 Ad Hoc        ADMIN_______________
  M204 Macro         ____________________
  Read ACL           ADMIN_______________
  Read Macro         ____________________
  SoftSpy Server     ADMIN_______________
  Spy On             ____________________
  Update ACL         ADMIN_______________
  Update Macro       ADMIN_______________




=>

 1=HELP                    3=QUIT       4=TOP        5=BOTTOM     6=SAVE
 7=BACKWARD   8=FORWARD    9=REPEAT    10=ACLS      11=MACROS    12=RETRIEVE
```

Press the FORWARD PF key (PF8) to display the authorization entry screen shown in Figure 2. This screen is used to authorize your use of ITS products.

Figure 2: EDIT CONFIG Authorization Entry Screen

```
2 of 2               SoftSpy for Model 204               01 SEP 1998 12:00:00
EDIT CONFIG
================================================================================
SoftSpy Version      3.0C                    SoftSpy Serial Number    980260
                                             Authorization Key      EPPQMKFL
Start Date           __ ___ ____             Expiration Date     01 AUG 1998

Customer Name        SoftSpy Trial

CPU Model Number     ****                    CPU Serial Number        ******

Optional Features        User Limit          Permitted Operating Systems
  X Debugging               ____                    X DOS
  X Performance tuning      ____                    X CMS
  X QA Testing              ____                    X MVS
  X MUSE                    ____                    X MVS/ESA

Configuration Entry Editing Actions (X to request specified action)
  _ Delete this authorization entry   _ Insert new authorization entry
=>

 1=HELP                    3=QUIT       4=TOP        5=BOTTOM     6=SAVE
 7=BACKWARD   8=FORWARD    9=REPEAT    10=ACLS      11=MACROS    12=RETRIEVE
```

You should update this screen with any new configuration information, expiration date, and authorization key provided with your installation materials. If your authorization key is for an expiration date that has passed you must contact Technical Support to obtain a new authorization key. Once you have made any required changes, press the SAVE PF key (PF6) to save the configuration. Saving the configuration information will write it out to the ITSAUTH file. It will also activate SoftSpy servers running in IODEV=55 threads. You can then press the QUIT PF key (PF3) to exit the ITS product configuration editor. All authorized ITS products should now be ready for use.

Chapter 7: Verify the Installation

This chapter describes the process of verifying that ITS products are correctly installed and available for general use.

Verify SoftSpy Operation

To test that SoftSpy server(s) are enabled issue the command:

```
SPY ON
```

When SoftSpy has been successfully turned on, the following message will be displayed prior to the Model 204 command prompt. (There will be a short delay prior to the message while the SoftSpy User Language code precompiles.)

```
SPY ON
SPY.021: For the exclusive use of SoftSpy Trial
>
```

Create an ad hoc procedure like the one shown below or include any existing procedure that you have available.

```
BEGIN
FOR %I FROM 1 TO 5
        %J = %I * %I
        PRINT %I AND 'SQUARED IS' AND %J
END FOR
END
```

The SoftSpy interactive evaluation screen will now be displayed on your terminal (see Figure 3). Type the command:

```
WATCH %I, %J
```

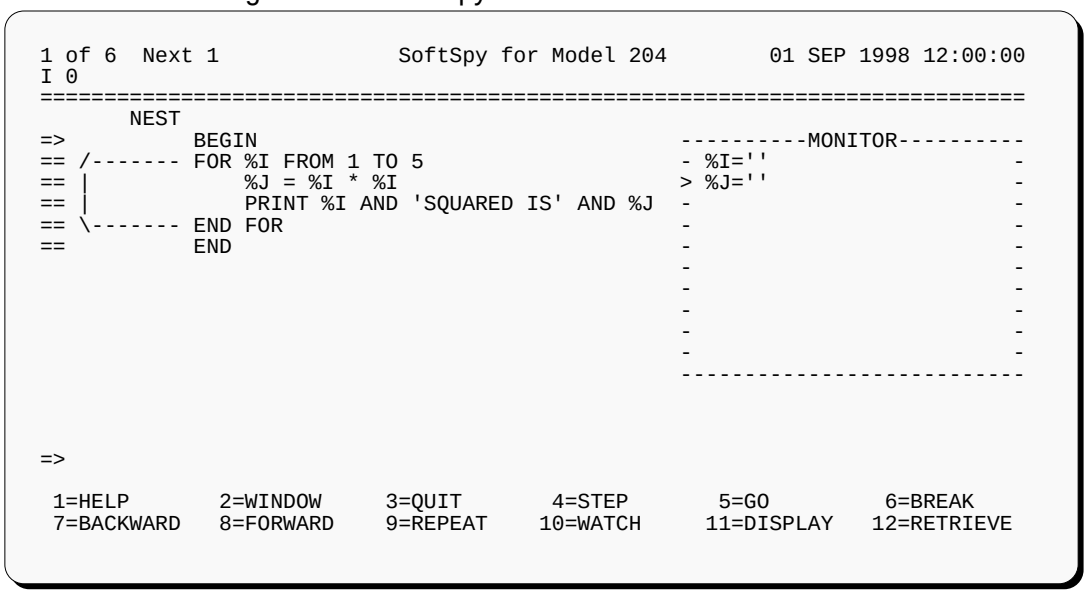
so that you can monitor the values of the percent variables as they change during evaluation. Use PF4 to single step through the procedure or PF5 to run the procedure to its end. You might also refer to the SoftSpy *Reference Manual* to try some of the other features of SoftSpy. At the completion of this test, you may turn off SoftSpy by issuing the command:

```
SPY OFF
```

This may be issued from either the Model 204 command prompt, or from the command area just above the PF key labels on the SoftSpy screen.

In the event of any difficulties, contact Technical Support.

Figure 3: The SoftSpy Interactive Evaluation Screen



Verify MUSE Operation

Two simple tests may be performed to verify that MUSE is available for use. To verify command level MUSE, enter the following command at the Model 204 command prompt:

```
MUSE CLOSE *
```

If no errors are issued, then command level MUSE is active, and ready for use.

To verify statement level MUSE, enter and run the following request:

```
BEGIN
MUSE CLOSE *
END
```

If this simple request compiles and evaluates without errors, then statement level MUSE is active and ready for use.

In the event of any difficulties, contact Technical Support.

Chapter 8: Tailor ITS Products

This chapter describes the process of tailoring ITS products for site specific needs.

Tailor the SoftSpy Configuration

SoftSpy uses configuration information to determine the access authority of end-users during SoftSpy sessions. The configuration can be modified only by those Model 204 users whose user identifiers have been included in the SoftSpy ADMIN SCLASS via subsystem management. The initial installation process will prompt you for a list of those user identifiers and perform the required subsystem management tasks. If you wish to modify the list of users who are authorized to perform configuration changes, you must use Model 204 Subsystem Management.

The SoftSpy configuration provides you with the ability to limit end-user access to certain SoftSpy features. This is done by associating an Access Control List (ACL) with a SoftSpy privilege via the EDIT CONFIG command. An ACL is a list of Model 204 users who are to be granted privileges. The following table shows which privileges can be limited and the name of the ACL associated with each at the completion of an initial installation.

Privilege Name	Associated ACL	Meaning
M204 Ad Hoc	ADMIN	User can issue M204 command from SoftSpy command line or user macro.
M204 Macro	null	User can issue M204 command from system macros.
Read ACL	ADMIN	User can read access control lists.
Read MACRO	null	User can read system macros.
SoftSpy Server	ADMIN	User can issue the SPY SERVER command.
Spy ON	null	User can issue the SPY ON command.
Update ACL	ADMIN	User can update access control lists.
Update MACRO	ADMIN	User can update system macros.

Model 204 users who are in the ADMIN SCLASS can use the SoftSpy EDIT CONFIG command to change the name of the ACL associated with any command. This simply changes the name of the list that will be checked when an end-user attempts to use one of the commands listed above. A null ACL name indicates that all end-users may use the command.

ACLs are constructed and maintained via the EDIT ACL command. Initially, the only users who may perform this function are those that were entered during the installation process. The ADMIN ACL is constructed during an initial installation with the same user identifiers that are put into the SoftSpy Subsystem ADMIN SCLASS.

Tailor SoftSpy Environments

The *SoftSpy Reference Manual* provides instructions for tailoring SoftSpy environments to meet local needs. The following environments may be changed:

- The Base environment,
- The Interactive Debug environment, and,
- The Interactive Performance Tuning environment, and,
- The Interactive Quality Assurance Testing environment.

Each of these environments may be tailored at two levels:

- For all users of SoftSpy, or,
- For individual users (by Model 204 User ID).

Items such as PFKEY settings and data display columns may be customized.

Another customization described is how to make SoftSpy skip over the interactive execution of selected subsystems that are used as tools such as SSTEST. SoftSpy may be tailored to skip over any number of selected subsystems.

As a final note, SoftSpy contains a powerful macro language, which enables you to write new SoftSpy commands.

Chapter 9: System Manager Considerations

SoftSpy uses background tasks called SoftSpy servers which normally run in IODEV=55 threads to assist in program monitoring. When a User Language program is being executed under the control of SoftSpy, the program is run in the user's normal server, and one of the server threads is used by SoftSpy to control and monitor the execution of the program. There must be one server thread for each simultaneous user of SoftSpy.

SoftSpy and the MONITOR Command

SoftSpy uses two wait type codes that can be seen using the MONITOR command. They appear in the WT column that is used to contain the wait type for a user, and are the values 38 and 39.

A value of 38 is used by a SoftSpy server to indicate that execution is suspended and that it is awaiting a request from a user.

A value of 39 is used to indicate that a user is suspended while a SoftSpy server is performing operations for the user.

Both of these wait type codes are swappable but not bumpable.

ITS Product Files

ITS products use four different files. The usage of each file is summarized below.

SPYPROC This file contains procedures and help information used by SoftSpy. It is never updated, and can be shared between several different online systems. If this file is corrupted it can be restored from the installation materials.

SPYDATA This file contains various types of data that must be retained. This includes configuration information, Access Control Lists (ACLs) and copies of all SoftSpy macros. A base version of this file is created by the installation process, but the information in this file is modified when configuration, ACL, or macro changes are made. Periodic backups of this file should be made for recovery purposes. A separate instance of this file is required for each online system.

SPYTEMP This file serves as a scratch pad for information during the execution of SoftSpy. Currently defined window descriptions, copies of macros being edited, and PF key settings are examples of the information saved in SPYTEMP. The CREATE.SPYTEMP procedure in SPYPROC can be used to recreate this file, if necessary. A separate instance of this file is required for each online system.

ITSAUTH This file contains authorization data. It is a simple sequential file containing 256 byte fixed length records. It is refreshed when the ITS product configuration is saved using the SPY EDIT CONFIG command. If ITS products will be used in multiple online and batch systems, ITSAUTH should be shared among them.

Year 2000 Testing Considerations

If you are setting the CPU clock ahead on your processor for year 2000 testing, then contact Technical Support for a key that will permit SoftSpy servers to start when the clock is set ahead. This will be done by giving you a key that has a start date, as well as an expiration date, that defines a window of time in the future that you can test under with SoftSpy.

If you are doing year 2000 testing using the Model 204 SYSDATE and SYSTIME parameters, then you do not need a new SoftSpy key, since SoftSpy key processing is not influenced by the settings of these parameters.

Chapter 10: Additional Installations

This chapter discusses the procedures to follow when you have already installed the current version of ITS products successfully, and wish to install them again in different ONLINE or BATCH204 jobs. These procedures are designed to speed up the process for a system manager who is very familiar with ITS products installation, and wishes to save time. However, it is never a problem to perform the entire installation process again.

Install SoftSpy in Additional ONLINE Jobs

If you are installing SoftSpy in additional ONLINEs under the same operating system and Model 204 release after an initial installation, an abbreviated procedure may be used.

The SPYPROC file is never updated and may be shared by multiple ONLINEs running SoftSpy. Therefore, the Create and Restore the SPYPROC File step described in the *Online Installation Steps* chapter may be omitted on subsequent ONLINEs.

The DDs/DLBLs/ FILEDEFs for SPYPROC and ITSAUTH for each ONLINE may point to the same dataset.

Each ONLINE must have its own SPYTEMP and SPYDATA files.

The INSTALL.SOFTSPY procedure must be run in each ONLINE to add the subsystem definition to CCASYS, and to create and initialize SPYTEMP and SPYDATA.

Install MUSE in Additional Online and Batch204 Jobs

It may be desirable to use MUSE in Model 204 4.1.1 ONLINE or BATCH204 jobs in addition to the job where SoftSpy was initially installed. For these additional job streams add a DD/FILEDEF/DLBL for the previously created ITSAUTH data set to the job stream.

Appendix A: CMS Execs

SSPYFDEF EXEC

```
&CONTROL CMS
&ERROR &EXIT &RETCODE
*
*
* DEFINE THE SOFTSPY DATABASE FILES ACCORDING TO AN OPERAND
* PASSED ALONG WITH COMMAND
*
     &IF /&1 EQ /      &GOTO -NOARG
     &IF &1 EQ ALOCSSPY &GOTO -ALOCSSPY
     &IF &1 EQ CCASYS   &GOTO -CSYS
     &IF &1 EQ COMMON   &GOTO -COMMON
     &IF &1 EQ SPYPDMP  &GOTO -SPYPDMP
     &IF &1 EQ ITSAUTH  &GOTO -ITSAUTH
     &IF &1 EQ SPYDATA  &GOTO -SPYDATA
     &IF &1 EQ SPYPROC  &GOTO -SPYPROC
     &IF &1 EQ SPYTEMP  &GOTO -SPYTEMP
&EXIT

-NOARG
&BEGTYPE

THE SSPYFDEF COMMAND ARGUMENT WAS NOT RECOGNIZED

&END
&EXIT

-SPYPROC
     FILEDEF SPYPROC  MODE DSN M204 SPYPROC
&EXIT

-SPYDATA
     FILEDEF SPYDATA  MODE DSN M204 SPYDATA
&EXIT

-SPYTEMP
     FILEDEF SPYTEMP  MODE DSN M204 SPYTEMP
&EXIT

-ITSAUTH
   FILEDEF ITSAUTH MODE DSN M204 ITSAUTH (BLOCK 2560 LRECL 256 RECFM FB
&EXIT

-ALOCSSPY
     M204UTIL ALLOC M204 SPYPROC MODE (PRIMARY n CYL)
     M204UTIL ALLOC M204 SPYDATA MODE (PRIMARY n CYL)
     M204UTIL ALLOC M204 SPYTEMP MODE (PRIMARY n CYL)
     M204UTIL ALLOC M204 ITSAUTH MODE (PRIMARY n CYL)
&EXIT

-CSYS
     FILEDEF CCASYS   MODE DSN M204 CCASYS
&EXIT

-COMMON
     FILEDEF CCAPRINT DISK  SPYINST CCAPRINT A
     FILEDEF CCAAUDIT DISK  SPYINST CCAAUDIT A
     FILEDEF CCASNAP  DUMMY
     FILEDEF CCATEMP MODE  DSN M204 CCATEMP
     FILEDEF CCASTAT MODE  DSN M204 CCASTAT
&EXIT
```

Appendix B: VSE JCL

SPYINST JCL

```
// JOB SPYINST
* $$ ********************************************************************
*                Computer Corporation of America
*                        06/97
* $$ ********************************************************************
/*  SPYINST allocates SOFTSPY system files and unloads SPYPROC   *
/*    dumpfile from tape.                                        *
/*                                                               *
/*    Note that in the allocate step the DLBL and EXTENTs are    *
/*    stated explicitly for each SOFTSPY system file, while in   *
/*    the create step the SOFTSPY proc is used. The allocate     *
/*    step cannot have the direct access (DA) code present on    *
/*    the DLBL statements, and the create step (and the online   *
/*    job) must have the (DA) code present.                      *
/*                                                               *
/*    Make sure that the explicit DLBL and EXTENT statements in  *
/*    the allocate step match the proc in all aspects except     *
/*    the DA codes.                                              *
/*                                                               *
/* ***************************************************************
/* ***************************************************************
/*                                                               *
/*  Add assign statements as needed:                             *
/*                                                               *
/*  // ASSGN SYS000,X'CUU'                                       *
/*                                                               *
/*  The jcl as it is provided assumes you have made              *
/*  standard assignments for the logical units (SYS000)          *
/*  you reference in your EXTENT statements.                     *
/*                                                               *
/* ***************************************************************
/*  To adapt this stream to your particular installation the     *
/*  following changes should be made:                            *
/*                                                               *
/*  (1)  modify the job statement to conform to your standards.  *
/*                                                               *
/*  (2)  change the DLBL and EXTENT to reflect your dataset      *
/*       names and locations as in other MODEL 204 jobs.         *
/*       assign SYS008 to a printer for the audit trail, or      *
/*       add DLBL and EXTENT statements for ccaaudit.            *
/*                                                               *
/*  (3)  Assign SYS016 to the input tape device.                 *
/*                                                               *
/* ***************************************************************
/*
/* ************************************************************* *
/* step alloc: MODEL204 allocate of all SOFTSPY system files     *
/* ************************************************************* *
/*
// EXEC PROC=M204JCL
/* // DLBL M204JCL,'M204.JCL.LIBRARY',9999
/* // EXTENT SYSnnn,volser,,,start,length
// LIBDEF PROC,SEARCH=M204JCL.sublib
// EXEC PROC=M204V411
/* // DLBL M204LIB,'M204LIB.V411.LIBRARY',99/366,SD
/* // EXTENT SYSnnn,volser,,,start,length
// LIBDEF PHASE,SEARCH=M204LIB.V411
// EXEC PROC=M204SYS
// DLBL   SPYPROC,'M204.SOFTSPY.R30.SPYPROC',99/366,SD
// EXTENT SYS000,volser,,,0000,000      (AT LEAST 400 PAGES)
// DLBL   SPYDATA,'M204.SOFTSPY.SPYDATA',99/366,SD
// EXTENT SYS000,volser,,,0000,000      (AT LEAST 150 PAGES)
// DLBL   SPYTEMP,'M204.SOFTSPY.SPYTEMP',99/366,SD
// EXTENT SYS000,volser,,,0000,000      (AT LEAST 100 PAGES)
// DLBL   ITSAUTH,'M204.SOFTSPY.ITSAUTH',99/366,SD
```

```
// EXTENT SYS000,volser,,,0000,000      (AT LEAST   7 PAGES)
// ASSGN  SYS000,DISK,VOL=volser,SHR
// ASSGN  SYS008,PRINTER
// EXEC   ALLOCATE,SIZE=AUTO
ALLOCATE FILE(SPYPROC,SPYDATA,SPYTEMP,ITSAUTH)
/*
// EXEC PROC=M204JCL
/* // DLBL M204JCL,'M204.JCL.LIBRARY',9999
/* // EXTENT SYSnnn,volser,,,start,length
// LIBDEF PROC,SEARCH=M204JCL.sublib
// EXEC LIBR
 ACCESS S=M204JCL.sublib
 CATALOG SFTSPY.PROC   REPLACE=YES
// DLBL   SPYPDMP,'M204.SOFTSPY.R30.SPYPROC.DUMP',,SD
// EXTENT SYS000,VOLSER
// DLBL   SPYPROC,'M204.SOFTSPY.R30.SPYPROC',,DA
// EXTENT SYS000,volser
// DLBL   SPYDATA,'M204.SOFTSPY.SPYDATA',,DA
// EXTENT SYS000,volser
// DLBL   SPYTEMP,'M204.SOFTSPY.SPYTEMP',,DA
// EXTENT SYS000,volser
// DLBL   ITSAUTH,'M204.SOFTSPY.ITSAUTH',,DA
// EXTENT SYS000,volser
/+
/*
*
* ************************************************************** *
* step unld:  unload the SPYPROC dump file.                      *
* ************************************************************** *
*
// UPSI 1
// DLBL   SDSKOUT,'M204.SOFTSPY.R30.SPYPROC.DUMP',99/366,SD
// EXTENT SYS032,volser,,,0000,000      (AT LEAST 400 PAGES)
// ASSGN  SYS032,DISK,VOL=volser,SHR
// PAUSE  PLEASE MOUNT MODEL 204 INSTALL TAPE (VS411n)
// ASSGN  SYS016,tape          TAPE ADDRESS FOR VS411n
// MTC    REW,SYS016
// MTC    FSF,tape,30
// TLBL   SPYDMP,'M204.SPYDMP',,VS411n,,11
// EXEC DITTO
$$DITTO TSQ INPUT=SYS016,FILEIN=SPYDMP,OUTPUT=SYS032
$$DITTO EOJ
/*
/&
/*
/&
```

SPYRINST JCL

```
// JOB SPYRINST
* ************************************************************************
*               Computer Corporation of America
*                         06/97
* ************************************************************************
/*   SPYRINST allocates SPYPROC and SPYPDMP files and unloads the *
/*   SPYPROC dumpfile from tape.                                  *
/*                                                                *
/*     Note that in the allocate step the DLBL and EXTENTs are    *
/*     stated explicitly for each SOFTSPY system file, while in   *
/*     the create step the SOFTSPY proc is used. The allocate     *
/*     step cannot have the direct access (DA) code present on    *
/*     the DLBL statements, and the create step (and the online   *
/*     job) must have the (DA) code present.                      *
/*                                                                *
/*     Make sure that the explicit DLBL and EXTENT statements in  *
/*     the allocate step match the proc in all aspects except     *
/*     the DA codes.                                              *
/*                                                                *
```

```
/* ****************************************************************
/* ****************************************************************
/*                                                 *
/*   Add assign statements as needed:                        *
/*                                                 *
/*   // ASSGN SYS000,X'CUU'                                *
/*                                                 *
/*   The jcl as it is provided assumes you have made          *
/*   standard assignments for the logical units (SYS000)       *
/*   you reference in your EXTENT statements.                 *
/*                                                 *
/* ****************************************************************
/*  To adapt this stream to your particular installation the     *
/*  following changes should be made:                       *
/*                                                 *
/*   (1)  modify the job statement to conform to your standards.  *
/*                                                 *
/*   (2)  change the DLBL and EXTENT to reflect your dataset     *
/*        names and locations as in other MODEL 204 jobs.       *
/*        assign SYS008 to a printer for the audit trail, or     *
/*        add DLBL and EXTENT statements for ccaaudit.          *
/*                                                 *
/*   (3)  Assign SYS016 to the input tape device.              *
/*                                                 *
/* ****************************************************************
/*
/* ************************************************************** *
/* step alloc: MODEL204 allocate of all SOFTSPY system files      *
/* ************************************************************** *
/*
// EXEC PROC=M204JCL
/* // DLBL M204JCL,'M204.JCL.LIBRARY',9999
/* // EXTENT SYSnnn,volser,,,start,length
// LIBDEF PROC,SEARCH=M204JCL.sublib
// EXEC PROC=M204V411
/* // DLBL M204LIB,'M204LIB.V411.LIBRARY',99/366,SD
/* // EXTENT SYSnnn,volser,,,start,length
// LIBDEF PHASE,SEARCH=M204LIB.V411
// EXEC PROC=M204SYS
// DLBL   SPYPROC,'M204.SOFTSPY.R30.SPYPROC',exp date,SD
// EXTENT SYS000,volser,,,0000,000       (AT LEAST 400 PAGES)
// ASSGN  SYS008,PRINTER
// EXEC   ALLOCATE,SIZE=AUTO
ALLOCATE FILE(SPYPROC)
/*
// EXEC PROC=M204JCL
/* // DLBL M204JCL,'M204.JCL.LIBRARY',9999
/* // EXTENT SYSnnn,volser,,,start,length
// LIBDEF PROC,SEARCH=M204JCL.sublib
// EXEC LIBR
 ACCESS S=M204JCL.sublib
 CATALOG SFTSPY.PROC   REPLACE=YES
// DLBL   SPYPDMP,'M204.SOFTSPY.R30.SPYPROC.DUMP',,SD
// EXTENT SYS000,volser
// DLBL   SPYPROC,'M204.SOFTSPY.R30.SPYPROC',,DA
// EXTENT SYS000,volser
// DLBL   SPYDATA,'M204.SOFTSPY.SPYDATA',,DA
// EXTENT SYS000,volser
// DLBL   SPYTEMP,'M204.SOFTSPY.SPYTEMP',,DA
// EXTENT SYS000,volser
// DLBL   ITSAUTH,'M204.SOFTSPY.ITSAUTH',,DA
// EXTENT SYS000,volser
/+
/*
*
* ************************************************************** *
* step unld:  unload the SPYPROC dump file.                      *
* ************************************************************** *
```

```
*
// UPSI 1
// DLBL   SDSKOUT,'M204.SOFTSPY.R30.SPYPROC.DUMP',99/366,SD
// EXTENT SYS032,volser
// ASSGN  SYS032,DISK,VOL=volser,SHR
// PAUSE  PLEASE MOUNT MODEL 204 INSTALL TAPE (VS411n)
// ASSGN  SYS016,tape            TAPE ADDRESS FOR VS411n
// MTC    REW,SYS016
// MTC    FSF,tape,30
// TLBL   SPYDMP,'M204.SPYDMP',,VS411n,,11
// EXEC DITTO
$$DITTO TSQ INPUT=SYS016,FILEIN=SPYDMP,OUTPUT=SYS032
$$DITTO EOJ
/*
/&
/*
/&
```