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Chapter 1: Introduction

This document describes the steps necessary to install and validate the four SYSTEM 2000® software products: the basic SYSTEM 2000 software, the Multi-User™ software, the CICS Interface, and the QueX™ software.

To install the products you have licensed, prepare job JCLGENER to retrieve job JCLINST from the media, and then run that job to unload the media.

After installation, run the tests provided to validate operation of the licensed products.

Please review all the installation steps before executing any of them. Contact the Austin Technical Support Department if you have questions about installation.

When you have installed the Version 1 software, you will have the following disk data sets:

FILE	3390 SPACE	PHYSICAL CHARACTERISTICS and DESCRIPTION
1	20 cylinders	DSN=S2K.V1.LOAD LRECL=UND RECFM=U BLKSIZE=7294 DSORG=PO All load modules, including executable module SYS2K. A description of each module is in Appendix B.
2	20 cylinders	DSN=S2K.V1.SOURCE LRECL=80 RECFM=FB BLKSIZE=6160 DSORG=PO Installation JCL, macros, validation programs, command files, data files, and source routines. A description of each member is in Appendix C.
3	2 cylinders	DSN=S2K.V1.CNTL LRECL=80 RECFM=FB BLKSIZE=6160 DSORG=PO Data set allocated at installation time to receive all generated JCL. This file is not on the delivery media. A description of each member is in Appendix D.

FILE	3390 SPACE	PHYSICAL CHARACTERISTICS and DESCRIPTION
4	1 cylinder	DSN=S2K.V1.VALID LRECL=132 RECFM=FBA BLKSIZE=1320 DSORG=PO Expected output from validation tests. A description of each member is in Appendix E.

Chapter 2: Base Installation

Unload and Catalog Media Contents

Below is the JCL to copy the data set S2K.V1.JCLINST from media to disk.

Illus. 2.1 JCLGENER

```
//JCLGENER JOB
//*----------------MODIFY JOB CARD AS NEEDED----------------
//*********************************************************
//* COPY JCLINST FILE FROM DELIVERY TAPE
//*********************************************************
//*
//COPY     EXEC PGM=IEBGENER
//SYSPRINT DD  SYSOUT=A
//SYSUT1   DD  DSN=S2K.V1.JCLINST,DISP=OLD,LABEL=(1,SL),
//             UNIT=CART,VOL=SER=XXXXXX,
//             DCB=(DEN=4,LRECL=80,BLKSIZE=6160,RECFM=FB)
//SYSUT2   DD  DSN=S2K.V1.JCLINST,DISP=(NEW,CATLG,DELETE),
//             UNIT=SYSDA,SPACE=(TRK,(1,1))
//SYSIN    DD  DUMMY
//*
```

When job JCLINST (Illus. 2.2) is run, the SYSTEM 2000 libraries are preallocated and cataloged using the IEFBR14 utility, and then populated with the delivery media contents using the IEBCOPY utility.

Illus. 2.2 JCLINST

```
//JCLINST JOB (ACCTINFO),
//    S2K,REGION=0M
//* USE OF THIS SOFTWARE IS SUBJECT TO YOUR LICENSE
//* AGREEMENT WITH SAS INSTITUTE.
//*
//* THE FOLLOWING LEGAL NOTICES ALSO APPLY:
//*
//* COPYRIGHT (C) 2000, SAS INSTITUTE INC., CARY, NC,
//* USA.  ALL RIGHTS RESERVED
//*
//* U.S. GOVERNMENT RESTRICTED RIGHTS. USE, DUPLICATION,
//* OR DISCLOSURE OF THIS SOFTWARE AND RELATED
//* DOCUMENTATION BY THE U.S. GOVERNMENT IS SUBJECT TO
//* THE AGREEMENT WITH SAS INSTITUTE AND THE
```

```
//* RESTRICTIONS SET FORTH IN FAR 52.227-19, COMMERCIAL
//* COMPUTER SOFTWARE - RESTRICTED RIGHTS (JUNE 1987).
//*
//*************************************************************
//* ALLOCATE NEW S2K DATA SETS
//*************************************************************
//NEWALLOC EXEC PGM=IEFBR14
//LOAD     DD DSN=S2K.V1.LOAD,
//         DISP=(NEW,CATLG),
//         SPACE=(CYL,(20,0,70)),
//         DCB=(DSORG=PO,RECFM=U,BLKSIZE=7294),
//         UNIT=DISK,VOL=SER=XXXXXX
//SOURCE   DD DSN=S2K.V1.SOURCE,
//         DISP=(NEW,CATLG),
//         SPACE=(CYL,(20,0,70)),
//         DCB=(DSORG=PO,RECFM=FB,LRECL=80,BLKSIZE=6160),
//         UNIT=DISK,VOL=SER=XXXXXX
//CNTL     DD DSN=S2K.V1.CNTL,
//         DISP=(NEW,CATLG),
//         SPACE=(CYL,(2,0,70)),
//         DCB=(DSORG=PO,RECFM=FB,LRECL=80,BLKSIZE=6160),
//         UNIT=DISK,VOL=SER=XXXXXX
//VALID    DD DSN=S2K.V1.VALID,
//         DISP=(NEW,CATLG),
//         SPACE=(CYL,(1,1,70)),
//         DCB=(DSORG=PO,RECFM=FBA,LRECL=132,BLKSIZE=1320),
//         UNIT=DISK,VOL=SER=XXXXXX
/*
//*************************************************************
//*  COPY TAPE CONTENTS TO DISK
//*************************************************************
//LOADALL  EXEC PGM=IEBCOPY
//SYSPRINT DD  SYSOUT=A
//SYSUT3   DD  UNIT=SYSDA,SPACE=(TRK,(50))
//SYSUT4   DD  UNIT=SYSDA,SPACE=(TRK,(50))
//OUTLOAD  DD  DSN=S2K.V1.LOAD,DISP=OLD
//OUTSOURC DD  DSN=S2K.V1.SOURCE,DISP=OLD
//OUTVAL   DD  DSN=S2K.V1.VALID,DISP=OLD
//INLOAD   DD  DSN=S2K.V1.LOAD,
//             UNIT=CART,DISP=OLD,
//             LABEL=(2,SL),VOL=SER=CCCCCC
//INSOURCE DD  DSN=S2K.V1.SOURCE,
//             UNIT=CART,DISP=OLD,
//             LABEL=(3,SL),VOL=REF=*.INLOAD
//INVAL    DD  DSN=S2K.V1.VALID,
//             UNIT=CART,DISP=OLD,
//             LABEL=(4,SL),VOL=REF=*.INLOAD
//S2KSETI  DD  DSN=S2K.V1.S2KSETI,
//             UNIT=CART,DISP=OLD,
//             LABEL=(5,SL),VOL=REF=*.INLOAD
//SETTEXT  DD  DSN=S2K.V1.SETTEXT,
//             UNIT=CART,DISP=OLD,
//             LABEL=(6,SL),VOL=REF=*.INLOAD
//SYSIN    DD  *
       COPY OUTDD=OUTLOAD,INDD=((INLOAD,R))
       COPY OUTDD=OUTSOURC,INDD=((INSOURCE,R))
       COPY OUTDD=OUTVAL,INDD=((INVAL,R))
```

```
       COPY OUTDD=OUTLOAD,INDD=((S2KSETI,R))
       COPY OUTDD=OUTSOURC,INDD=((SETTEXT,R))
/*
//*
```

Edit and Run Job JCLS2KIV

You begin installation by completing the installation checklist shown in Appendix A. Then use the values you supply on the checklist to code the S2KIVJCL macro. The macro is part of job JCLS2KIV (Illus. 2.3), which is on your SYSTEM 2000 SOURCE library. The job assembles the macro and generates the jobs to run the remaining installation and validation procedures.

The ASM step in this job creates IEBUPDTE input. When the UPDATE step of the job is executed, generated jobs are sent to the CNTL library you specify for the JCLOUT parameter; any identically named members on that PDS will be replaced. You need to supply the appropriate library names for the MAC and JCLOUT parameters.

Illus. 2.3 JCLS2KIV

```
//JCLS2KIV JOB
//*************************************************************
//* CREATE TAILORED INSTALLATION JCL
//*************************************************************
//*
//GENJCL   PROC MAC='S2K.V1.SOURCE',
//         JCLOUT='S2K.V1.CNTL',
//         UNIT=SYSDA,SYSOUT=A
//ASM      EXEC  PGM=ASMA90,
//            PARM='DECK,NOOBJ'
//SYSUT1   DD  UNIT=&UNIT,SPACE=(1700,(600,100))
//SYSUT2   DD  UNIT=&UNIT,SPACE=(1700,(300,50))
//SYSUT3   DD  UNIT=&UNIT,SPACE=(1700,(300,50))
//SYSLIB   DD  DSN=&MAC,DISP=SHR
//SYSPRINT DD  SYSOUT=&SYSOUT,DCB=BLKSIZE=1089
//SYSTERM  DD  SYSOUT=&SYSOUT
//SYSPUNCH DD  DSN=&&S2KIV,UNIT=&UNIT,SPACE=(TRK,(10,5)),
//            DISP=(,PASS)
//*
//*************************************************************
//* PLACE THE JOBS CREATED IN THE ASSEMBLY STEP
//* INTO THE PDS IDENTIFIED BY THE JCLOUT DSN.
//*************************************************************
//*
//UPDATE   EXEC PGM=IEBUPDTE,PARM=NEW,COND=(4,LT,ASM)
//SYSPRINT DD  SYSOUT=&SYSOUT
//SYSUT2   DD  DISP=SHR,DSN=&JCLOUT
//SYSIN    DD  DSN=&&S2KIV,DISP=(OLD,DELETE),UNIT=SYSDA
//         PEND
//*
//         EXEC GENJCL
//SYSIN    DD  *
S2KIVJCL S2KIVJCL JOBINFO='',                                    X
               ACTINFO=(),                                       X
```

```
                JCL1=,                                                  X
                JCL2=,                                                  X
                JCL3=,                                                  X
                JCL4=,                                                  X
                LOAD=S2K.V1.LOAD,                                       X
                CNTL=S2K.V1.CNTL,                                       X
                SOURCE=S2K.V1.SOURCE,                                   X
                VALID=S2K.V1.VALID,                                     X
                DBIND=S2K.V1,                                           X
                DBVOL=,                                                 X
                CISIZE=4096,                                            X
                PADVOL=,                                                X
                SYSOUT=A,                                               X
                PROCLIB=SYS3.PROCLIB,                                   X
                SYSPROC=SYS3.CMDPROC,                                   X
                SYSHELP=SYS3.HELP,                                      X
                WRKUNIT=SYSDA,                                          X
                LINKPGM=IEWL,                                           X
                ASMPGM=ASMA90,                                          X
                COBPGM=IGYCRCTL,                                        X
                COBLIB=SYS1.COBLIB,                                     X
                FORTPGM=FORTVS,                                         X
                PL1PGM=IEL0AA,                                          X
                PL1LIB=SYS1.PLIBASE,                                    X
                BASE=YES,                                               X
                MUP=YES,                                                X
                ACTIND=S2K.V1.ACCOUNT,                                  X
                ACTVOL=,                                                X
                ACTCYL=10,                                              X
                ACTUNIT=SYSDA,                                          X
                ACTBLK=9076,                                            X
                SVCNUM=,                                                X
                XMS=YES,                                                X
                AUTH=S2K.V1.AUTH,                                       X
                S2KCOM=S2K.V1.COM,                                      X
                XMSVOL=,                                                X
                CICS=YES,                                               X
                S2KLIB=S2K.CICS.S2KLIB,                                 X
                CICSMAC=CICS.MACLIB,                                    X
                CICSLOAD=CICS.LOADLIB,                                  X
                CICSCOB=CICS.COBLIB,                                    X
                CICSPL1=CICS.PL1LIB,                                    X
                SYS1MAC=SYS1.MACLIB,                                    X
                SYS1MOD=SYS1.MODGEN,                                    X
                QUEX=YES
        END
//*
```

Set Up PROC, CLIST, and Help Libraries

Once the base SYSTEM 2000 installation is complete, you may want to move the Institute-supplied procs, CLISTs, and help files, described below, into your production libraries. Job JCLPROCL is supplied for this purpose; it assumes you generated these members on your CNTL library. Refer to the

members themselves and to their corresponding help files for detailed information about CLIST and PROC execution.

The CLISTs generated on your CNTL library are as follows:

GENIUS	Executes the Genius validation CLISTs.
QUEX	Executes the QueX software.
QUVB	Executes the QueX User View Builder.
S2K	Executes SYSTEM 2000 software single-user.
S2KFRDB	Frees database files; called by the S2KFREE CLIST when the DBN parameter is specified.
S2KFREE	Frees all files allocated to SYSTEM 2000 software.
S2KM	Executes SYSTEM 2000 Multi-User software.

Corresponding on-line TSO help files that describe the above CLISTs are generated on your CNTL library. After they are moved to your system help library, enter "HELP <CLIST name>" to display information about a CLIST.

The batch JCL procs generated on your CNTL library are as follows:

S2KMU	Executes batch Multi-User interface SYS2KJOB.
S2KSU	Executes single-user SYSTEM 2000 software; allocates all files except database files.

For the SAS/ACCESS® Interface to SYSTEM 2000 software, you need to make minor changes to your SAS CLIST and to your SAS PROC. The SASS2K CLIST and SASS2KP PROC on your CNTL library should be merged with your SAS CLIST and SAS PROC in order to make SYSTEM 2000 software available.

The CLIST modifications are keyword parameters and ALLOC statement additions for the SYSTEM 2000 LOAD library, the S2KCOM file, and the S2KPARMS file. Also, S2KLOAD should be added to your TASKLIB statement.

The PROC modifications are the addition of keyword parameters for the SYSTEM 2000 LOAD library and the S2KCOM file. S2KLOAD should be included in your STEPLIB concatenation. Also, you need DD statements for the S2KCOM, S2KPARMS, and S2KDEFC files.

Chapter 3: Multi-User Installation

Assign SVC Slot for XMS Multi-User

If you are installing XMS Multi-User, assign any user SVC slot from the valid range of 200 through 255; the SVC does not need to be of a particular type. You specify the SVC number when you code SVCNUM= in the JCLS2KIV job.

Apply Zap for XMS Multi-User SVC Number

In order to indicate that you are running XMS Multi-User software, you must run job JCLZAP (Illus. 3.1) to zap the appropriate SVC number in CSECT S2KCMC and in the CSECT SVCADR in all Multi-User interfaces. When Multi-User software is initialized, the control program S2KCMC puts the entry point of S2KPC into the system SVC table, where all address spaces can access the SVC number. S2KCMC also writes the SVC number to the S2KCOM file, which is read by the interfaces, so that Multi-User communication is established. See the *Product Support Manual* for more information about S2KCMC execution.

Illus. 3.1 JCLZAP

```
//JCLZAP JOB (ACCTINFO),
//      S2K,REGION=0M
//*
//*************************************************************
//* APPLY ZAP FOR MULTI-USER SVC NUMBER
//*************************************************************
//*
//ZAP      PROC SYSOUT=A
//ZAP      EXEC PGM=IMASPZAP,PARM='IGNIDRFULL'
//SYSPRINT DD  SYSOUT=&SYSOUT
//SYSLIB   DD  DSN=S2K.V1.LOAD,DISP=SHR
//       PEND
//*
//*************************************************************
//* APPLY ZAP FOR MULTI-USER SVC NUMBER
//*************************************************************
//*
//ZAP      EXEC  ZAP
//SYSIN    DD   *
```

```
*
*  ZAP CARDS FOR XMS SYSTEM 2000
*
 NAME SYS2KJOB SVCADR
 REP 0008 07010701
 NAME S2KDMV6 SVCADR
 REP 0008 07010701
 NAME S2OP SVCADR
 REP 0008 07010701
 NAME MUPLINT  SVCADR
 REP 0008 07010701
 NAME CLEARS2K SVCADR
 REP 0008 07010701
 NAME S2000    SVCADR
 REP 0008 07010701
 NAME SYS2KTPI SVCADR
 REP 0008 07010701
 NAME S2KSIP   SVCADR
 REP 0008 07010701
 NAME SYS2K    SVCADR
 REP 0008 07010701
 NAME S2KXBUF  SVCADR
 REP 0008 07010701
 NAME S2KCMC   S2KCMC
 REP 000A 00FF
//*
```

Install XMS Multi-User Code

To install XMS Multi-User, run job JCLXAUTH (Illus. 3.2). This job executes IEBCOPY to place the S2KCMC and S2KPC load modules into the authorized library designated by your systems programmer. It then links S2KCMC as authorized and allocates the S2KCOM file as a 30-byte permanent data set.

Note: The allocation of S2KCOM for Version 1 requires this file to be shared option 4.

For sites running more than one release of SYSTEM 2000 software, S2KCMC, S2KPC and Multi-User must all be from the same SYSTEM 2000 release. If you are currently running Release 12.1 XMS Multi-User and want to run Version 1 XMS Multi-User, the following steps are recommended:

1. Assign a unique SVC to Version 1 XMS Multi-User.
2. Copy S2KCMC and S2KPC into a separate authorized library.
3. Create a separate S2KCOM file for Version 1.

Illus. 3.2 JCLXAUTH

```
//JCLXAUTH JOB (ACCTINFO),
//      S2K,REGION=0M
//*************************************************************
//*  COPY S2KCMC AND S2KPC TO AUTHORIZED LIBRARY
//*************************************************************
//STEP1    EXEC PGM=IEBCOPY
//SYSUT3   DD   UNIT=SYSDA,SPACE=(CYL,(1,1))
```

```
//SYSUT4   DD   UNIT=SYSDA,SPACE=(CYL,(1,1))
//INFIL    DD   DSN=S2K.V1.LOAD,DISP=SHR
//OTFIL    DD   DSN=S2K.V1.AUTH,DISP=SHR
//SYSPRINT DD   SYSOUT=A
//SYSIN    DD   *
  COPY INDD=INFIL,OUTDD=OTFIL
 S M=((S2KCMC,,R))
 S M=((S2KPC,,R))
//*************************************************************
//*  LINK S2KCMC AS AUTHORIZED
//*************************************************************
//LINK     EXEC PGM=IEWL,PARM='AMODE=31,RMODE=24'
//SYSLMOD  DD   DSN=S2K.V1.AUTH,DISP=SHR
//SYSPRINT DD   SYSOUT=A
//SYSUT1   DD   UNIT=SYSDA,SPACE=(3400,(400,50))
//SYSLIB   DD   DSN=S2K.V1.AUTH,DISP=SHR
//SYSLIN   DD   *
 INCLUDE SYSLIB(S2KCMC)
 ENTRY S2KCMC
 SETCODE AC(1)
 NAME S2KCMC(R)
//*************************************************************
//* ALLOCATE VSAM S2KCOM FILE
//*************************************************************
//ALLOC    EXEC PGM=IDCAMS
//SYSUDUMP DD SYSOUT=A
//SYSPRINT DD SYSOUT=A
//SYSIN    DD *
 DEFINE CLUSTER -
         (NAME(S2K.V1.COM) -
         RECORDS (1,1) -
         VOLUMES(DISK01) -
         NUMBERED -
         CISZ(30) -
         RECORDSIZE(30,30) -
         REUSE -
         SHR(4) )
```

Install Accounting Log Files

Job JCLACT (Illus. 3.3) executes the utility that allocates space for and initializes the Multi-User Accounting Log files. After Multi-User completes execution, ACTUTIL dumps the accounting records that were written to these files.

Illus. 3.3 JCLACT

```
//JCLACT JOB (ACCTINFO),
//      S2K,REGION=0M
//*
//*************************************************************
//* ALLOCATE DATA SETS FOR ACCOUNTING LOG FILES
//*************************************************************
//*
//ACTBLK   EXEC PGM=IEFBR14
```

```
//MANX     DD   DSN=S2K.V1.ACCOUNT.MANX,
//             DISP=(NEW,CATLG,DELETE),UNIT=SYSDA,
//             VOL=SER=DISK01,
//    DCB=(RECFM=VB,LRECL=252,BLKSIZE=9076,DSORG=PS),
//             SPACE=(CYL,(10))
//MANY     DD   DSN=S2K.V1.ACCOUNT.MANY,
//             DISP=(NEW,CATLG,DELETE),UNIT=SYSDA,
//             VOL=SER=DISK01,
//    DCB=(RECFM=VB,LRECL=252,BLKSIZE=9076,DSORG=PS),
//             SPACE=(CYL,(10))
//*
```

Permanent Multi-User VSAM Files

S2KPADnn and S2KUSER files are VSAM in Version 1. Multi-User initialization is quicker when these files are permanently allocated.

Illus. 3.4 JCLMUFIL

```
//JCLMUFIL JOB (ACCTINFO),
//    S2K,REGION=0M
//*
//*************************************************************
//* ALLOCATE S2KPAD00 VSAM FILES USING IDCAMS
//*
//* NOTES:
//*    CISIZE MUST BE A VALID SYSTEM 2000 CISIZE
//*    RECORDSIZE MUST BE 7 BYTES LESS THAN CISIZE.
//*
//* VALID CISIZES AND RECORDSIZES:
//*          4096           4089
//*          7168           7161
//*         12288          12281
//*         18432          18432
//*         22528          22521
//*         26624          26617
//*
//*  ALLOCATE THE MULTI-USER S2KUSERS FILE.
//*
//*  THIS FILE MUST BE CISIZE 12288.
//*
//*************************************************************
//*
//VSAM     PROC SYSOUT=A
//         EXEC PGM=IDCAMS
//SYSPRINT DD  SYSOUT=&SYSOUT
//         PEND
//         EXEC VSAM
//SYSIN    DD *

 DELETE S2K.V1.S2KPAD00 CLUSTER
 DEFINE CLUSTER                    +
   (NAME('S2K.V1.S2KPAD00')     +
   NONINDEXED                       +
```

```
   VOL(DISK01)                     +
   CYLINDERS(5 10)                  +
   CISZ(4096)            +
   RECORDSIZE(4089 4089)   +
   SHR(2,3)                        +
   SPEED )                         +
   DATA(NAME('S2K.V1.S2KPAD00.DATA'))

 DELETE S2K.V1.S2KUSERS CLUSTER
 DEFINE CLUSTER                    +
   (NAME('S2K.V1.S2KUSERS')     +
   NONINDEXED                      +
   VOL(DISK01)                     +
   CYLINDERS(5 1)                  +
   CISZ(12288)                   +
   RECORDSIZE(12281 12281)   +
   SHR(2,3)                        +
   REUSE                           +
   SPEED )                         +
   DATA(NAME('S2K.V1.S2KUSERS.DATA'))

/*
```

Chapter 4: CICS Installation

S2KCUSE Requirements

The S2KCUSE module, which defines the SYSTEM 2000 interface in the CICS environment, is the only delivered load module that must be AMODE=31 and RMODE=24. All other interface load modules are linked with AMODE=31 and RMODE=ANY.

Each CICS may have a unique S2KCUSE module. This module is parameter driven, using the S2KUGEN macro. You specify the parameter values you want to change. Any parameter not specified in S2KCUSE will pick up the default value specified in the S2KUGEN macro.

To change a parameter not in S2KCUSE, either add it, or modify the S2KUGEN macro.

Below is S2KCUSE as delivered. You should compare these values to those in your previous release and adjust accordingly. See the following section called "New S2KCUSE Parameters" for a description of parameters added in Version 1.

Illus. 4.1 S2KCUSE

```
S2KUGEN PLEX=64,        MAX NUMBER OF PLEX USERS              X
      PWAITS=2,         NUMBER OF 1 SECOND WAITS IF BUSY      X
      SCF=32,           MAX NUMBER OF SCF USERS               X
      MAXTERM=100,      MAX NUMBER OF TERMINALS               X
      DOSTOP=Y,         SHOULD S2K DO AUTO STOP S2K?          X
      CHKTRNS=N,        BUT FIRST CHECK NEXT TRANSID?         X
      TCTUA=N,          MRO ONLY, IS TCTUA AVAILABLE?         X
      TCTDSP=0,         DISPLACEMENT IF TCTUA IS AVAILABLE    X
      AOR1=,            AOR#1 APPLICATION ID                  X
      AOR1TR=,          TOR TRANSID TO GET TO AOR#1           X
      AOR2=,            AOR#2 APPLICATION ID                  X
      AOR2TR=,          TOR TRANSID TO GET TO AOR#2           X
      AOR3=,            AOR#3 APPLICATION ID                  X
      AOR3TR=,          TOR TRANSID TO GET TO AOR#3           X
      S2KLOG=S2KL       DESTINATION FOR S2K STATS
END
```

PLEX is the number of PLEX users that can execute concurrently. If your PLEX programs are pseudo-conversational you may need to increase this value. This value should not exceed the value of the USERS parameter in the Multi-User region.

PWAITS is the number of one-second intervals the interface waits trying to obtain resources for the PLEX user when all are currently assigned. If no PLEX resources are available after this time then the interface issues a return code of 43 to the PLEX application program.

SCF is the number of S2KU users that can be active in the Multi-User region simultaneously. This value should not exceed the value of the TPTHREADs parameter in the Multi-User region.

MAXTERM is the maximum number of S2KU users that can occupy resources in the CICS region. This value should not exceed the value of the TPSCRUN parameter in the Multi-User region.

New S2KCUSE parameters

DOSTOP controls automatic STOP S2K processing. **DOSTOP=N** means no automatic STOP S2K processing will be done. Sites whose application programs always issue their own STOP S2K or execute in pseudo-conversational mode should execute with DOSTOP=N. Pseudo-conversational is defined as a series of individual transactions grouped together to form one logical transaction. Because the interface is unable to determine the last transaction in the series it cannot safely issue a STOP S2K.

DOSTOP=Y means automatic STOP S2K processing is activated and the interface will issue a STOP S2K when needed unless the transaction is considered pseudo-conversational.

CHKTRNS helps the interface determine whether a transaction is pseudo-conversational. A value of **N** means that if automatic STOP S2K processing is activated then all transactions are considered non-pseudo-conversational and a STOP S2K is generated if needed. A value of **Y** means that if automatic STOP S2K processing is activated then any transaction that terminates with the command-level command EXEC CICS RETURN TRANSID(*transid*) is considered pseudo-conversational.

TCTUA controls whether terminal error recovery is activated for sites running in an MRO environment. A value of **Y** means error recovery is to be activated and a terminal control user area of 12 bytes is available for interface use. A terminal error occurring in the TOR region will cause error recovery to be invoked in the correct AOR. A value of **N** means terminal error recovery for MRO environments is not activated.

TCTDSP is the displacement into the TCTUA where the interface's 12 bytes of storage begin for sites running with TCTUA=Y. This is necessary for sites who might already be using a TCTUA. Displacements are relative to zero. **Note:** If TCTDSP is set to a value other than zero then the interface code added to your DFHZNEP will need minor modification. The variable S2KDISP must be set to the same value as TCTDSP.

AOR1 is the VTAM APPLID of your AOR.

AORTR1 is the transaction id that the TOR DFHZNEP will execute when a terminal error occurs. This transaction must be defined in your TOR as a remote resource whose destination is AOR1. This transaction will execute as transaction S2KM in the AOR and will invoke program S2KMRO.

Sites that have multiple AORs per TOR should specify parameters **AOR2**, **AOR2TR**, **AOR3** and **AOR3TR** as above.

S2KLOG is the extra partition transient data destination where interface statistics are logged. S2KL is the default.

Assemble and Link S2KCUSE

After modifying S2KCUSE to meet your site needs you must assemble and link it into your SYSTEM 2000 CICS LOAD library. CNTL member JCLCL01 contains the necessary JCL. Review the output and condition codes. S2KCUSE is a resident CICS module, so your CICS must be cycled in order for any changes to be in effect.

Illus. 4.2 JCLCL01

```
//JCLCL01 JOB (ACCTINFO),
//    S2K,REGION=0M
//*
//*        ASSEMBLE AND LINK ASSEMBLY PROGRAMS
//*
//CLTPASM  PROC S=NONAME,SYSOUT=A,WRKUNIT=SYSDA,
//*
//         SOURCE='S2K.V1.SOURCE',
//         LOAD='S2K.V1.LOAD',
//         SYS1MAC='SYS1.MACLIB',
//         SYS1MOD='SYS1.MODGEN',
//         CICSMAC='CICS.MACLIB'
//*
//ASM      EXEC PGM=ASMA90,
//         PARM=(NODECK,OBJECT)
//SYSLIB   DD DSN=&CICSMAC,DISP=SHR,DCB=BLKSIZE=32000
//         DD DSN=&SYS1MAC,DISP=SHR
//         DD DSN=&SOURCE,DISP=SHR
//         DD DSN=&SYS1MOD,DISP=SHR
//SYSUT1   DD UNIT=&WRKUNIT,SPACE=(1700,(400,50))
//SYSUT2   DD UNIT=&WRKUNIT,SPACE=(1700,(400,50))
//SYSUT3   DD UNIT=&WRKUNIT,SPACE=(1700,(400,50))
//SYSPRINT DD SYSOUT=&SYSOUT
//SYSIN    DD DSN=&SOURCE(&S),DISP=SHR
//SYSPUNCH DD DUMMY
//SYSLIN   DD DSN=&SYSOBJ,DISP=(NEW,PASS),
//         UNIT=&WRKUNIT,
//         SPACE=(1700,(1400,50))
//LKED     EXEC PGM=IEWL,
//   PARM=(MAP,LET,LIST,NCAL,'AMODE=31,RMODE=24')
//SYSLIN   DD DISP=(OLD,DELETE),DSN=&SYSOBJ
//SYSLIB   DD DSN=&LOAD,DISP=SHR
//SYSLMOD  DD DSN=&LOAD(&S),DISP=SHR
//SYSUT1   DD UNIT=(&WRKUNIT,SEP=(SYSLIN,SYSLMOD)),
//         SPACE=(CYL,(5,2),,CONTIG),DSN=&SYSUT1
//SYSPRINT DD SYSOUT=&SYSOUT
//         PEND
//ASM1     EXEC CLTPASM,S=S2KCUSE
```

Error Recovery Requirements

SYSTEM 2000 software includes code to customize CICS error recovery programs DFHPEP and DFHZNEP. Code to customize the system recovery table DFHSRT is also provided. SYSTEM 2000 customization is required to ensure proper recovery in case of an abend or terminal error.

1. DFHPEP provides an exit point for error recovery when an application program abends. Source member S2KPEP contains error recovery code for the SYSTEM 2000 interface and is a complete replacement for IBM's default DFHPEP. If you have an existing DFHPEP then you must incorporate S2KPEP code into your version of DFHPEP. You may use CNTL member JCLPEP to assemble and link DFHPEP.

2. DFHZNEP provides an exit point for error recovery when a terminal error occurs. Source member S2KZNEP contains error recovery code for the SYSTEM 2000 interface. S2KZNEP has been pre-translated and should be inserted after label NEP0AF in the IBM-supplied program DFHZNEPX. The following statements in S2KZNEP should be moved to follow the LTORG statement in DFHZNEPX :

```
DS2KCUSE
DURBMU                                                    *02*
```

   Note: If you execute in an MRO environment and have chosen terminal error recovery (S2KCUSE option TCTUA=Y) then you must set variable S2KDISP to the value you chose for S2KCUSE option TCTDSP. No modification is required if TCTUA=0.

   Assemble and link DFHZNEP with JCL supplied for your CICS installation. In the assemble step you must add your SYSTEM 2000 source library to the SYSLIB concatenation to pick up SYSTEM 2000 macros.

   When link editing DFHZNEP the entry point of the resulting load module must be set to DFHZNENA.

   Illus. 4.3 DFHZNEP

```
//DFHZNEP  JOB (JOBCARD)
//*
//*
//ASM      EXEC PGM=IEV90,
//         PARM='DECK,NOOBJECT,LIST,XREF(SHORT)'
//SYSLIB   DD  DSN=S2K.V1.SOURCE,DISP=SHR===> your SYSTEM 2000 SOURCE
                                             library
//         DD  DSN=CICS.SDFHMAC,DISP=SHR
//         DD  DSN=SYS1.MACLIB,DISP=SHR
//         DD  DSN=SYS1.AMODGEN,DISP=SHR
//SYSUT1   DD UNIT=(SYSDA,SEP=(SYSLIB)),SPACE=(1700,(400,50))
//SYSUT2   DD UNIT=(SYSDA,SEP=(SYSLIB)),SPACE=(1700,(400,50))
//SYSUT3   DD UNIT=(SYSDA,SEP=(SYSLIB)),SPACE=(1700,(400,50))
//SYSPRINT DD  SYSOUT=*
//SYSPUNCH DD DSN=&&TEMPPDS(&MEM.0),
//            DISP=(NEW,PASS),
//            UNIT=SYSDA,
```

```
//             DCB=(RECFM=FB,LRECL=80,BLKSIZE=400),
//             SPACE=(400,(200,100,5))
//SYSIN    DD DSN=YOUR.LIBRARY(&MEM),DISP=SHR
//LKED     EXEC PGM=IEWL,PARM='LIST,LET,XREF',
//         COND=(5,LT,ASM)
//SYSPRINT DD SYSOUT=*
//SYSUT1   DD UNIT=SYSDA,SPACE=(1024,(200,20))
//SYSLMOD  DD DISP=SHR,DSN=S2K.V1.LOAD(&MEM)
//SYSLIB   DD DISP=SHR,DSN=CICS.SDFHLOAD
//OBJLIB   DD DSN=&&TEMPPDS(&MEM.0),
//            DISP=(OLD,PASS),
//            VOL=REF=*.ASM.SYSPUNCH
//SYSLIN   DD  DDNAME=SYSIN
//         PEND
//DFHZNEP  EXEC CLASML,MEM=DFHZNEP
//LKED.SYSIN DD *
 ORDER DFHEAI
 ORDER DFHZNEP0
 ORDER DFHEAI0
 INCLUDE SYSLIB(DFHEAI)
 INCLUDE OBJLIB(DFHZNEP0)
 INCLUDE SYSLIB(DFHEAI0)
 MODE AMODE(31),RMODE(ANY)
 ENTRY DFHZNENA
 NAME DFHZNEP(R)
```

3. DFHSRT allows CICS to intercept certain operating system abend codes and attempt recovery. If when installing your Multi-User software you chose Cross Memory Services (XMS) as the method of communication between dependent regions and Multi-User, you will need a CICS system recovery table (DFHSRT). Source member S2KSRT contains the abend codes related to Cross Memory Services and should be added to your DFHSRT. Your SIT must be modified accordingly.

   Illus. 4.4 Source member S2KSRT

```
DFHSRT TYPE=SYSTEM,                                          *
       ABCODE=(052,053,0D4,0D5,0D6,0D7,0D8,                  *
       0D9,0DA,0DB,0DC,0DE,0DF,0E2),                         *
       RECOVER=YES
```

4. In addition to providing automatic STOP S2K processing, PLXTRUE also attempts to clean up users left in the interface at CICS shutdown time. PLXTRUE links to programs S2KTERM and S2KADRC to facilitate this cleanup. Sites that run with an external security manager on their CEMT transaction need to take the following steps to avoid security violations that may occur when PLXTRUE links to other programs:

   PLXTRUE executes under the authority of the userid that terminated CICS. Ensure that this userid has access to programs S2KTERM and S2KADRC.

   As an alternative, you can change the resource security option for the CEMT transaction to RESSEC=NO. This should not present a problem for most sites, because use of CEMT is most often restricted to privileged users in a production environment.

CICS Resource Requirements

The CICS interface requires additions to several CICS tables. The programs, transactions, and file additions are provided in source member S2KCSD. Destination additions are provided in source member S2KDCT.

CNTL member JCLCSDU provides sample JCL to update your DFHCSD file with the required SYSTEM 2000 entries from S2KCSD. JCLCSDU creates group S2KV1. You must add S2KV1 to your group list as specified by the GRPLIST parameter in your CICS startup job. If you plan to install the QueX software, you can concatenate member CSDQUEX at this time.

Note: If you execute in an MRO environment and have chosen terminal error recovery (S2KCUSE option TCTUA=Y), you must have transaction definitions in the TOR for each transaction indicated by S2KCUSE options AOR1TR, AOR2TR and AOR3TR.

TOR transaction definition:

DEFINE TRANSACTION(*aor1tr*) REMOTESYSTEM(*target aor1*) REMOTENAME(S2KM)

Illus. 4.5 JCLCSDU

```
//JCLCSDU JOB (ACCTINFO),
//    S2K,REGION=0M
//*
//*  THIS JOB UPDATES THE CSD WITH THE PROPER ENTRIES.
//*
//        EXEC PGM=DFHCSDUP
//STEPLIB  DD  DSN=CICS.LOADLIB,DISP=SHR
//DFHCSD   DD  DSN='YOURCSD',DISP=SHR
//SYSUT1   DD  UNIT=SYSDA,SPACE=(1024,(100,100))
//SYSPRINT DD  SYSOUT=A
//SYSIN    DD  DSN=S2K.V1.SOURCE(S2KCSD),DISP=SHR
```

Illus. 4.6 S2KCSD

```
************************************************************
*  THE FOLLOWING DEFINITIONS ARE TO BE INCLUDED AS         *
*  INPUT TO AN EXECUTION OF THE DFHCSDUP PROGRAM.          *
************************************************************
************************************************************
*                                                          *
*  SYSTEM 2000 REQUIRED TRANSACTIONS                       *
*                                                          *
************************************************************
  DEFINE TRANSACTION(S2KL) PROGRAM(S2KLOG)   GROUP(S2KV1)
  DEFINE TRANSACTION(LALL) PROGRAM(S2KLIST)  GROUP(S2KV1)
  DEFINE TRANSACTION(LPLX) PROGRAM(S2KLIST)  GROUP(S2KV1)
  DEFINE TRANSACTION(LSCF) PROGRAM(S2KLIST)  GROUP(S2KV1)
  DEFINE TRANSACTION(S2KM) PROGRAM(S2KMRO)   GROUP(S2KV1)
  DEFINE TRANSACTION(SCFZ) PROGRAM(S2KTERM)  GROUP(S2KV1)
  DEFINE TRANSACTION(TALL) PROGRAM(S2KTERM)  GROUP(S2KV1)
  DEFINE TRANSACTION(TPLX) PROGRAM(S2KTERM)  GROUP(S2KV1)
  DEFINE TRANSACTION(TSCF) PROGRAM(S2KTERM)  GROUP(S2KV1)
```

```
  DEFINE TRANSACTION(S2KE) PROGRAM(S2KEDTRT) GROUP(S2KV1)
  DEFINE TRANSACTION(S2KK) PROGRAM(S2KPFKY)  GROUP(S2KV1)
  DEFINE TRANSACTION(S2KU) PROGRAM(SCFDRVR)  GROUP(S2KV1)
  DEFINE TRANSACTION(S2OP) PROGRAM(SCFDRVR)  GROUP(S2KV1)
  DEFINE TRANSACTION(S2VA) PROGRAM(ASMCCL)   GROUP(S2KV1)
  DEFINE TRANSACTION(S2VC) PROGRAM(COBCCL)   GROUP(S2KV1)
  DEFINE TRANSACTION(S2VP) PROGRAM(PL1CCL)   GROUP(S2KV1)
  DEFINE TRANSACTION(UDMP) PROGRAM(CLUDUMP)  GROUP(S2KV1)
*************************************************************
*                                                           *
*  SYSTEM 2000 REQUIRED PROGRAMS                            *
*                                                           *
*************************************************************
*
*  VALIDATION PROGRAMS
*
  DEFINE PROGRAM(ASMCCL)   GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(COBCCL)   GROUP(S2KV1) LANGUAGE(COBOL)
  DEFINE PROGRAM(PL1CCL)   GROUP(S2KV1) LANGUAGE(PLI)
*
*  SCF PROGRAMS
*
  DEFINE PROGRAM(SCFDRVR)  GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(SCFERROR) GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(SCFINTF)  GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(SCFPGBD)  GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(SCFPGMG)  GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(S2KTERM)  GROUP(S2KV1) LANGUAGE(ASSEMBLER)
      EXECKEY(CICS)
*
*  PLEX PROGRAMS
*
  DEFINE PROGRAM(PLXFRMT)  GROUP(S2KV1) LANGUAGE(ASSEMBLER) RES(YES)
  DEFINE PROGRAM(PLXINIT)  GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(PLXTRUE)  GROUP(S2KV1) LANGUAGE(ASSEMBLER)

      EXECKEY(CICS)
      DESCRIPTION(PLEX TASK RELATED USER EXIT)
  DEFINE PROGRAM(S2KMRO)  GROUP(S2KV1) LANGUAGE(ASSEMBLER)
      DESCRIPTION(MRO CLEANUP PROGRAM)
  DEFINE PROGRAM(S2KLOG)  GROUP(S2KV1) LANGUAGE(ASSEMBLER)
      DESCRIPTION(LOGGING PROGRAM)
*
*  COMMON PROGRAMS
*
  DEFINE PROGRAM(CLUDUMP)  GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(S2KADRC)  GROUP(S2KV1) LANGUAGE(ASSEMBLER) RES(YES)
      EXECKEY(CICS)
  DEFINE PROGRAM(S2KCUSE)  GROUP(S2KV1) LANGUAGE(ASSEMBLER) RES(YES)
  DEFINE PROGRAM(S2KLIST)  GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(S2KPFKY)  GROUP(S2KV1) LANGUAGE(ASSEMBLER)
*
*  COMMAND EDITOR PROGRAMS
*
  DEFINE PROGRAM(CONVERT)  GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(EDJRNL)   GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(GETNXLEX) GROUP(S2KV1) LANGUAGE(ASSEMBLER)
```

```
  DEFINE PROGRAM(IOAID)    GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(IOCTRL)   GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(IOMEMBR)  GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(OUTBLD)   GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(SETMODE)  GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(S2KDLT)   GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(S2KDSPL)  GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(S2KEDTRT) GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(S2KEND)   GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(S2KEPROC) GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(S2KERR)   GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(S2KFIND)  GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(S2KGET)   GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(S2KINS)   GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(S2KLISTD) GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(S2KMDFY)  GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(S2KPTR)   GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(S2KSAVE)  GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(S2KSBMT)  GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(S2KSCR)   GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(S2KSEND)  GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(S2KSETPF) GROUP(S2KV1) LANGUAGE(ASSEMBLER)
  DEFINE PROGRAM(USERID)   GROUP(S2KV1) LANGUAGE(ASSEMBLER)
************************************************************
*                                                          *
*  SYSTEM 2000 REQUIRED FILES                              *
*                                                          *
************************************************************
  DEFINE FILE(S2KCOM) RECORDSIZE(30) BROWSE(YES) GROUP(S2KV1)
  DEFINE FILE(S2KLIB) RECORDFORMAT(V) GROUP(S2KV1)
      ADD(YES) BROWSE(YES) DELETE(YES) READ(YES) UPDATE(YES)
************************************************************
*                                                          *
*  ADD GROUP(S2KV1) TO YOUR MAIN GRPLIST                   *
*                                                          *
************************************************************
  ADD GROUP(S2KV1) LIST(GRPLIST)
```

DCT Requirements

Member S2KDCT on the SOURCE library contains entries that are required for SYSTEM 2000 logging and for execution of the SUBMIT command. Modifications to your CICS JCL are required. See the section below on CICS JCL Requirements.

Illus. 4.7 S2KDCT

```
JESRDR  DFHDCT TYPE=SDSCI,DSCNAME=JESRDR,TYPEFLE=OUTPUT,              +
               RECFORM=VARUNB,BLKSIZE=88,RECSIZE=84,BUFNO=1
*
S2KLOG  DFHDCT TYPE=SDSCI,          SYSTEM 2000 LOGGING               +
               DSCNAME=S2KLOG,                                        +
               BLKSIZE=136,                                           +
               RECSIZE=132,                                           +
               RECFORM=VARUNB,                                        +
               TYPEFLE=OUTPUT,                                        +
```

```
               BUFNO=1
*
MJCL    DFHDCT TYPE=EXTRA,DESTID=MJCL,DSCNAME=JESRDR
*
S2KL    DFHDCT TYPE=EXTRA,         SYSTEM 2000 LOG                    +
               DESTID=S2KL,                                           +
               DSCNAME=S2KLOG
```

CICS JCL Requirements

1. Add the SYSTEM 2000 library S2K.V1.LOAD to your DFHRPL concatenation.

2. Add DD statements for the S2KLIB and S2KCOM files. S2KCOM is only required if you are running XMS Multi-User.

3. Add DD statements for transient data destinations S2KLOG and JESRDR.

Illus. 4.8 CICS JCL Statements

```
//*         S2K INTERFACE LOAD LIBRARY TO BE
//*         CONCATENATED WITH DFHRPL DD STATEMENTS
//          DD  DSN=S2K.V1.LOAD,DISP=SHR
//*
//*         S2KCOM FOR XMS COMMUNICATION TO MULTI-USER
//S2KCOM    DD  DSN=S2K.V1.COM,DISP=SHR
//*
//*         S2K EDITOR AND PFKEYS FILE TO BE INCLUDED
//*         IN CICS JCL
//S2KLIB    DD  DSN=S2K.CICS.S2KLIB,DISP=OLD
//*
//*         S2KLOG IS A TRANSIENT DATA DESTINATION
//*         TO RECORD ERROR CONDITIONS WITHIN THE
//*         S2K CICS INTERFACE
//S2KLOG    DD  SYSOUT=A
//*
//*         JESRDR IS USED BY THE COMMAND EDITOR
//*         FEATURE (S2KE) TO SUBMIT JCL TO THE
//*         INTERNAL JES READER
//JESRDR    DD  SYSOUT=(A,INTRDR)
```

Create the S2KLIB File

CNTL member JCLVSAM defines the S2KLIB VSAM file required by the Command Editor. See the *SYSTEM 2000 CICS Interface Manual* for a detailed description of the Command Editor. Command Editor files for Release 12.1 are upward compatible with Version 1 and need not be redefined.

The S2KLIB VSAM file is also used to maintain PF key modifications based on the userid or terminal ID. See the S2KK transaction in the *SYSTEM 2000 CICS Interface Manual*.

Illus. 4.9 JCLVSAM

```
//JCLVSAM JOB (ACCTINFO),
//      S2K,REGION=0M
//*************************************************************
//*
//* ALLOCATE CICS COMMAND EDITOR AND
//* PF KEY DEFINITION VSAM FILE
//*
//*************************************************************
//VSAM PROC SYSOUT=A
//         EXEC PGM=IDCAMS
//SYSUDUMP DD  SYSOUT=&SYSOUT
//SYSPRINT DD  SYSOUT=&SYSOUT
//        PEND
// EXEC VSAM
//SYSIN    DD *
 DEFINE CLUSTER -
         (NAME(S2K.CICS.S2KLIB) -
         VOLUMES(DISK01) -
         RECORDSIZE(2000 19000) -
         REUSE -
         CYLINDERS(5 0) -
         KEYS(12 0) -
         FREESPACE(20 20) -
         SHR(3 3) )
// EXEC VSAM
//DUMMREC DD *
DUMMY
//SYSIN DD *
          REPRO-
          INFILE(DUMMREC)-
          OUTDATASET(S2K.CICS.S2KLIB)
/*
```

Chapter 5: QueX Installation

Run JCLQXZAP to Zap Multi-User SVC Number

Member JCLQXZAP, shown in Illus. 5.1, zaps the appropriate Multi-User SVC number in CSECT SVCADR of module QUVBPGM. If you have not installed Multi-User software yet, you can run this job at a later time.

Illus. 5.1 JCLQXZAP

```
//JCLQXZAP JOB (ACTINFO),
//    USERID,TIME=(1)
//*
//*************************************************************
//*  APPLY ZAP FOR MULTI-USER SVC NUMBER
//*************************************************************
//*
//ZAP      PROC ZAPPARM=IGNIDRFULL,SYSOUT=A,
//           LOAD='S2K.V1.LOAD'
//ZAP      EXEC PGM=IMASPZAP,PARM='&ZAPPARM'
//SYSPRINT DD  SYSOUT=&OUT
//SYSLIB   DD  DSN=&LOAD,DISP=SHR
//         PEND
//*
//*************************************************************
//*  APPLY ZAP FOR MULTI-USER SVC NUMBER
//*************************************************************
//*
//ZAP      EXEC ZAP
//SYSIN DD *
*
* ZAP CARDS FOR XMS SYSTEM 2000 MULTI-USER
*
 NAME QUVBPGM SVCADR
 REP 0008 0701,0701
//*
```

Run JCLALCAT to Create the QueX User View Database

Member JCLALCAT (Illus. 5.2) defines the QueX User View database QUEXCATALOG and loads validation user view UVDEMO into it. **Note:** The database name for the QueX User View database must be QUEXCATALOG, and the database password must be QUEX.

Illus. 5.2 JCLALCAT

```
//JCLALCAT JOB (ACTINFO),
//    USERID,TIME=(1)
//*
//************************************************************
//*  CREATE QUEXCATALOG DATA BASE
//************************************************************
//*
//S2KPROC  PROC SYSOUT=A,
//             PARMDSN='S2K.V1.CNTL(NLPARM)',
//             LOAD='S2K.V1.LOAD',
//             SOURCE='S2K.V1.SOURCE'
//GO       EXEC PGM=SYS2K,PARM='PAD00=YES'
//STEPLIB  DD   DSN=&LOAD,DISP=SHR
//SYSUDUMP DD   SYSOUT=&SYSOUT
//S2KPARMS DD   DSN=&PARMDSN,DISP=SHR
//CATDEFIN DD   DSN=&SOURCE.(CATDEFIN),DISP=SHR
//CATDATA  DD   DSN=&SOURCE.(CATDATA),DISP=SHR
//         PEND
//*
//************************************************************
//*  CREATE QUEXCATALOG DATA BASE
//************************************************************
//*
//CAT1     EXEC S2KPROC
//S2KCOMD  DD   *
USER,QUEX:
ALLOC QUEXCATALOG,FILES=ALL,VOL=SAS803,
UNIT=SYSDA,DISP=NEW:
IF ERROR THEN DBN IS QUEXCATALOG: CONTROL: RELEASE:
ENDIF:
EXIT:
//CAT2     EXEC S2KPROC
//S2KCOMD  DD   *
USER,QUEX:NDB IS QUEXCATALOG:
COMMAND FILE IS CATDEFIN:
CONTROL:SEPARATOR IS @:
ACCESS:DATA FILE IS CATDATA:
LOAD:
CONTROL:SEPARATOR IS *:
ACCESS:TALLY C11:
CONTROL:
ENABLE ROLLBACK:
SAVE DATA BASE ON SAS803:
EXIT:
//*
```

Add Changes for QueX Execution Under CICS

QueX software under CICS communicates with the SYSTEM 2000 Multi-User software only. This means that the QUEXCATALOG database that contains the user views and any databases the QueX software accesses must be accessible through your SYSTEM 2000 Multi-User environment.
User views that will be used with the QueX software under CICS must be built with the QueX software under TSO.

Job JCLCSDU provides sample JCL to update your DFHCSD file with the entries for the SYSTEM 2000 CICS interface. Edit the job to replace YOURCSD with the data set name of your DFHCSD file and replace (S2KCSD) with (CSDQUEX) on the SYSIN statement.

JCLCSDU job creates a group (S2KQUEX) on your CSD. You need to add this group to your group list, as specified in the GRPLIST parameter in your CICS startup job. To do so, either use the CEDA transaction online or add the following statement to the end of CSDQUEX:

```
ADD GROUP(S2KQUEX) LIST(YOURLIST)
```

After you log on to CICS, enter the transaction QUEX. From this point, QueX executes the same way it does under TSO.

Chapter 6: Base Validation

Successful completion of the validation tests assures that SYSTEM 2000 software is properly installed. The VALID library contains verified output from previous executions of the tests. To compare your output with the contents of the members on the VALID library, use job JCLVALID on the CNTL library to print the members.

Validate Self-Contained Facility

The Self-Contained Facility (SCF) and Report Writer are tested using prepared command files to issue commands. Member JCLSCF on the CNTL library contains the job stream to execute the tests. The job steps must execute in the order given because each step relies on a preceding one to supply the database in a known condition. Job JCLSCF is shown in Illus. 6.1.

Illus. 6.1 JCLSCF

```
//JCLSCF JOB (ACTINFO),
//    USERID,TIME=(1)
//*
//*************************************************************
//* SELF-CONTAINED FACILITY AND REPORT WRITER VALIDATION
//*************************************************************
//*
//S2KPROC  PROC PARMS=NLPARM,
//              SYSOUT=A
//GO       EXEC PGM=SYS2K
//STEPLIB  DD   DSN=S2K.V1.LOAD,DISP=SHR
//SYSUDUMP DD   SYSOUT=&SYSOUT
//S2KPARMS DD   DSN=S2K.V1.CNTL(&PARMS),DISP=SHR
//LIBDEFN  DD   DSN=S2K.V1.SOURCE(LIBDEFN),DISP=SHR
//LIBLDER  DD   DSN=S2K.V1.SOURCE(LIBLDER),DISP=SHR
//TESTRW1  DD   DSN=S2K.V1.SOURCE(TESTRW1),DISP=SHR
//         PEND
//*
//*************************************************************
//* TEST SELF-CONTAINED FACILITY
//*************************************************************
//*
//SCF1     EXEC S2KPROC
//S2KCOMD  DD   *
USER,LIB:
ALLOC LIBRARY,FILES=ALL,VOL=SAS803,UNIT=SYSDA,DISP=NEW:
IF ERROR THEN DBN IS LIBRARY: CONTROL: RELEASE:
ENDIF:
```

```
EXIT:
//*
//SCF2     EXEC S2KPROC
//S2KCOMD  DD   *
USER,LIB: NDB IS LIBRARY:
COMMAND FILE IS LIBDEFN:
CONTROL: ENABLE ROLLBACK:
CONTROL: SAVE DATA BASE ON SAS803:
EXIT:
//*
//*************************************************************
//* TEST REPORT WRITER
//*************************************************************
//*
//RW1      EXEC S2KPROC
//S2KCOMD  DD   *
USER,LIB: DBN IS LIBRARY: CONTROL: RELEASE:
EXIT:
//*
//RW2      EXEC S2KPROC
//S2KCOMD  DD   *
USER,LIB:
RESTORE LIBRARY:
ACCESS: COMMAND FILE IS TESTRW1:
EXIT:
//*
```

Validate PLEX

The CNTL library contains the PLEX validation program source for each programming language supported by SYSTEM 2000 software. Members JCLASM, JCLCOB, JCLFORT, and JCLPL1 contain the jobs to test execution of each language. Only the programming languages to be used with SYSTEM 2000 software at your site need to be tested.

Chapter 7: Multi-User Validation

Successful completion of the validation tests ensures that the Multi-User software is properly installed. The results from the Multi-User validation tests should be the same as from the base SYSTEM 2000 software test because the tests are the same.

Verify that the database files for the LIBRARY and PUBLISHERS databases are still allocated.

Initialize Multi-User and Run Validation Tests

Multi-User validation requires execution of two jobs, JCLMU and JCLMUDEP. Job JCLMU executes Multi-User. When the following message appears at the operator console, you are ready to submit job JCLMUDEP:

```
'S2K1117/01- MULTI-USER INITIALIZATION PHASE COMPLETE'
```

Job JCLMUDEP re-executes the base SYSTEM 2000 software validation tests in a Multi-User environment. It must use an initiator other than the one in which the Multi-User main task is running. Job JCLMU is shown in Illus. 7.1, and job JCLMUDEP is shown in Illus. 7.2.

Issue Console Operator Commands

During Multi-User execution, any of the SYSTEM 2000 Multi-User operator commands can be issued, for example:

F <job name>,D A,S	display all active tasks and their status
F <job name>,C S2K	terminate Multi-User when all active tasks are complete

See the *Product Support Manual* for complete information on the console operator commands.

The operator must not cancel any user job or the Multi-User main task with an OS CANCEL unless a problem prevents canceling through Multi-User. When validation is complete, use Multi-User termination commands to ensure that all dependent region jobs are notified that Multi-User is coming

down and to prevent user or test databases from being damaged. Shut down Multi-User from an OS console using a Multi-User operator command, such as CANCEL S2K.

Illus. 7.1 JCLMU

```
//JCLMU JOB (ACTINFO),
//    USERID,TIME=(1)
//*
//*************************************************************
//* INITIATE MULTI-USER MAIN TASK
//*************************************************************
//*
//MUMAIN   PROC SYSOUT=A
//S2K      EXEC PGM=S2KCMC,REGION=0M
//STEPLIB  DD   DSN=S2K.V1.AUTH,DISP=SHR
//S2KLOAD  DD   DSN=S2K.V1.LOAD,DISP=SHR
//S2KCOM   DD   DSN=S2K.V1.COM,DISP=SHR
//S2KPARMS DD   DSN=S2K.V1.CNTL(MUPARM),DISP=SHR
//S2KDIAG  DD   SYSOUT=&SYSOUT
//SYSOUT   DD   SYSOUT=&SYSOUT
//SYSUDUMP DD   SYSOUT=&SYSOUT
//*
//*************************************************************
//* FILES FOR MULTI-USER ACCOUNTING LOG
//*************************************************************
//*
//S2KMANX  DD   DSN=S2K.V1.ACCOUNT.MANX,DISP=SHR
//S2KMANY  DD   DSN=S2K.V1.ACCOUNT.MANY,DISP=SHR
//*
//         PEND
//*
//*************************************************************
//* INITIATE MULTI-USER MAIN TASK
//*************************************************************
//*
//         EXEC MUMAIN
//*
```

Illus. 7.2 JCLMUDEP

```
//JCLMUDEP JOB (ACTINFO),
//    USERID,TIME=(1)
//*
//*************************************************************
//* VALIDATE EXECUTION UNDER MULTI-USER
//*************************************************************
//*
//MUTEST   PROC SYSOUT=A
//TESTSTEP EXEC PGM=SYS2KJOB,COND=EVEN
//STEPLIB  DD DSN=S2K.V1.LOAD,DISP=SHR
//S2KCOM   DD DSN=S2K.V1.COM,DISP=SHR
//SYSUDUMP DD  SYSOUT=&SYSOUT
//S2KCOMD  DD  DDNAME=SYSIN
//LIBDEFN  DD  DSN=S2K.V1.SOURCE(LIBDEFN),DISP=SHR
//LIBLDER  DD  DSN=S2K.V1.SOURCE(LIBLDER),DISP=SHR
```

```
//TESTRW1  DD  DSN=S2K.V1.SOURCE(TESTRW1),DISP=SHR
//         PEND
//*
//*************************************************************
//* SELF-CONTAINED FACILITY VALIDATION
//*************************************************************
//*
//         EXEC MUTEST
//SYSIN    DD   *
USER,LIB:EXCLUSIVE  DATA BASE NAME IS LIBRARY:CONTROL:RELEASE:
EXIT:
//*
//         EXEC MUTEST
//SYSIN    DD   *
USER,LIB:
NDB IS LIBRARY:
COMMAND FILE IS LIBDEFN:
CONTROL: ENABLE ROLLBACK:
SAVE DATA BASE:
EXIT:
//*
//*************************************************************
//*  REPORT WRITER VALIDATION
//*************************************************************
//*
//         EXEC MUTEST
//SYSIN    DD   *
USER,LIB:EXCLUSIVE  DATA BASE NAME IS LIBRARY:CONTROL:RELEASE:
EXIT:
//*
//         EXEC MUTEST
//SYSIN    DD   *
USER,LIB:
RESTORE LIBRARY:
COMMAND FILE IS TESTRW1:
EXIT:
//*
```

Validate PLEX

Job JCLMUPLX is provided to validate COBOL, Assembler, FORTRAN, and PL/I. Jobs JCLASM, JCLCOB, JCLFORT, and JCLPL1 must have been run during single-user validation to create the programs used in JCLMUPLX.

Chapter 8: CICS Validation

CICS Validation

Post-installation validation concentrates on three areas: PLEX, automatic STOP S2K processing, and error recovery. Several tests are provided to validate a successful installation. Each of these tests can be executed in Assembler, COBOL or PL/I. Choose the transaction for the language your site uses.

```
S2VA (assembler)  S2VC (COBOL)  S2VP (PL/I)
```

The Multi-User Diagnostic Log can be used to determine whether installation is successful. Set the Multi-User Diagnostic LOGLEVEL to USEGM.

Validate PLEX

To verify that PLEX executes correctly and that the proper SVC has been specified for communication with SYSTEM 2000 Multi-User software, do the following:

Follow the validation transaction with the four-character test code "BOOK" and a book title from the LIBRARY database, such as, "HOUND OF THE BASKERVILLES".

Example: **S2VCBOOKHOUND OF THE BASKERVILLES**

The results are valid library database values.

```
(AUTHOR NAME)              (BOOK TITLE)                (SUBJECT)
    DOYLE            HOUND OF THE BASKERVILLES          FICTION
```

JCL is provided to precompile, translate, compile, and link the three languages. JCLCL02 for COBOL II, JCLCL03 for PL/I, and JCLCL04 for assembler language.

Validate Automatic STOP S2K Processing

Automatic STOP S2K processing is controlled by the S2KCUSE options DOSTOP and CHKTRNS. Module S2KCUSE resides in your CICS interface SOURCE library and may be modified to reflect your

site needs. The following validation tests can be executed to validate the various combinations of DOSTOP and CHKTRNS.

Automatic Stop S2K Processing turned off - - DOSTOP=N

To verify that automatic STOP S2K processing is turned off enter the following:

```
S2VCKCPX
```

A successful completion of the transaction is indicated by the following message:

```
"-AUTOMATIC STOP S2K PROCESSING VALIDATION COMPLETED-"
```

The Multi-User Diagnostic Log should show only the command START S2K.

Automatic Stop S2K Processing turned on - - DOSTOP=Y

To verify that automatic STOP S2K processing is functioning properly, two tests are required, one for normal transactions, and one for pseudo-conversational transactions.

Test 1: enter the following: `S2VCKCPX`

A successful completion of the transaction is indicated by the following message:

```
"-AUTOMATIC STOP S2K PROCESSING VALIDATION COMPLETED-"
```

The Multi-User Diagnostic Log should show these commands: START S2K, STOP S2K and a 0013 terminate message.

Test 2: To verify that pseudo-conversational transactions are not eligible for automatic STOP S2K processing (CHKTRNS = Y), enter the following: `S2VCCHKT`

A successful completion of the transaction is indicated by the following message:

```
"NEXT TRANSID CHECK VALIDATION COMPLETED, PLEASE PRESS ENTER KEY-"
```

The Multi-User Diagnostic Log should show only the command START S2K.

To continue the pseudo-conversational series press the enter key.

The USER STATUS DISPLAY screen should be displayed and your terminal ID should be reflected in the USER-ID column.

```
USER STATUS DISPLAY                PAGE 01

 USER-ID   STATUS   TYPE    OPCODE        RESPONSE          FLAG1
 0223      ACTIVE   PLEX    I/O COMP      NORM COMP         *NOT SET*
```

The Multi-User Diagnostic Log should now show the STOP S2K command and the 0013 terminate message.

Validate Error Recovery

To verify that your DFHPEP is functioning properly enter the following: `S2VCPEPX`

The transaction will abend with the abend code "PEPX". The Multi-User Diagnostic Log should show the command START S2K and an 0013 terminate message.

To verify that your DFHZNEP is functioning properly enter the following: `S2VCTORX`

From another terminal use the CICS master terminal transaction CEMT to release your terminal. This will cause DFHZNEP to gain control and perform error recovery processing.

The Multi-User Diagnostic Log should show the command START S2K and an 0013 terminate message.

If you run in an MRO environment and the S2KCUSE option TCTUA=Y then repeat the above test in the TOR region. Transaction S2VC must be defined to execute in the AOR.

Chapter 9: QueX Validation

Make sure that the QueX User View database, QUEXCATALOG, contains the initial user view named UVDEMO. Then, to validate the QueX software, follow the tutorial in the *QueX User's Guide*.

Chapter 10: SYSTEM 2000 Maintenance

This chapter contains descriptions of jobs that are not required during installation but may be useful or required later. There are jobs for each of the four products: the base, Multi-User, CICS interface, and QueX software. Several of these jobs are more fully documented in other SYSTEM 2000 manuals, which are referenced.

Base SYSTEM 2000 Software

Relink SYS2K

Job JCLS2KLN (Illus. 10.1) relinks executable module SYS2K. You run this job if you want to include or remove user exits from your system.

Illus. 10.1 JCLS2KLN

```
//JCLS2KLN JOB (ACCTINFO),
//    S2K,REGION=0M
//*
//*************************************************************
//* RELINK EXECUTABLE MODULE SYS2K
//*************************************************************
//*
```

```
//S2KLINK  PROC SYSOUT=A,WRKUNIT=SYSDA
//LKED     EXEC PGM=IEWL,
//    PARM=(MAP,XREF,LET,LIST,NCAL,'SIZE=(256K,64K)',
//    'AMODE=31','RMODE=ANY')
//SYSLMOD  DD  DSN=S2K.V1.LOAD(&LNAME),DISP=SHR
//SYSLIN   DD  DDNAME=SYSIN
//LOAD     DD  DSN=S2K.V1.LOAD,DISP=SHR
//SYSPRINT DD  SYSOUT=&SYSOUT
//SYSUT1   DD  UNIT=&WRKUNIT,SPACE=(1024,(400,20))
//         PEND
//*
//*************************************************************
//* RELINK EXECUTABLE MODULE SYS2K WITH S2EXIT
//*************************************************************
//*
// EXEC S2KLINK,LNAME=SYS2K
//SYSIN   DD  *
 REPLACE S2EXIT
 INCLUDE LOAD(SYS2K)
 INCLUDE LOAD(S2EXIT)
 ENTRY S2K
 NAME SYS2K
//*
//*************************************************************
//* RELINK EXECUTABLE MODULE SYS2K WITHOUT S2EXIT
//*************************************************************
//*
//* TO DELETE S2EXIT FROM SYS2K, REMOVE THE INCLUDE STATEMENT
//* FOR S2EXIT.  THE NCAL PARAMETER IS NECESSARY TO PREVENT
//* S2EXIT FROM BEING AUTOMATICALLY INCLUDED.
//*
```

Unload FFD Media

Job JCLFFDI provides sample JCL to unload a field fix distribution (FFD) mailer media, which SYSTEM 2000 Technical Support periodically sends to its customers. The first file on the media is always a PDS, which contains all of the fixes and JCL to apply them. Sometimes FFDs contain replacement load modules on a second file. This job provides sample JCL to unload future field fix distributions. When preparing this JCL, follow the instructions in the letter that accompanies the field fix distribution media.

Run S2KSETI to Authorize SYSTEM 2000 Software

S2KSETI is an independent utility that you run against your SYSTEM 2000 LOAD library to authorize the SAS Institute Program Products at your installation. You also run the utility to renew authorization. Under normal circumstances, all media that contain the base SYSTEM 2000 software are "pre-authorized" and you will not need to run S2KSETI. You will need to run it at a later date if you license additional software, if your CPU serial number changes, and at annual renewal time.

The procedures for new authorization and renewal authorization are the same. Before your SAS license expires, you will be invoiced for the renewal fee. When SAS Institute receives the renewal fee, you will be mailed parameter values that must be used to authorize SYSTEM 2000 software for the renewal

period. The source text members SETBTEXT, SETMTEXT, SETCTEXT, and SETQTEXT must be edited to supply the renewal information for each product. You must code the values in these members exactly as they are provided in order for the program to execute properly.

Executable module S2KSETI is provided on the LOAD library, and job JCLSET (Illus. 10.2) runs the program.

Illus. 10.2 JCLSET

```
//JCLSET JOB (ACTINFO),
//    USERID,TIME=(1)
//*
//*************************************************************
//* AUTHORIZE SAS INSTITUTE PROGRAM PRODUCTS
//* STEPS:
//*   1.  MODIFY MEMBER SET?TEXT IN SOURCE LIBRARY
//*       WITH YOUR UPDATED PARAMETERS
//*       ? = B FOR BASE PRODUCT
//*       ? = M FOR MULTI-USER PRODUCT
//*       ? = C FOR CICS INTERFACE PRODUCT
//*       ? = Q FOR QUEX PRODUCT
//*   2.  COMMENT OUT EXEC STEP FOR PRODUCT
//*       YOU DO NOT HAVE
//*   3.  EXECUTE THIS JOB.
//*
//*************************************************************
//*
//SETI     PROC PRODUCT=B,SET=SET
//STEP     EXEC PGM=S2KSETI,PARM='SRCLIB'
//STEPLIB  DD  DSN=S2K.V1.LOAD,DISP=SHR
//SRCLIB   DD  DSN=S2K.V1.LOAD,DISP=SHR
//SYSPRINT DD  SYSOUT=A
//SYSUDUMP DD  SYSOUT=A
//SYSIN    DD  DISP=SHR,
// DSN=S2K.V1.SOURCE(&SET.&PRODUCT.TEXT)
//         PEND
//BASE     EXEC SETI,PRODUCT=B  FOR BASE
//MUP      EXEC SETI,PRODUCT=M  FOR MULTI-USER
//CICS     EXEC SETI,PRODUCT=C  FOR CICS INTERFACE
//QUEX     EXEC SETI,PRODUCT=Q  FOR QUEX
```

New in Version 1, you can replace "PARM='SRCLIB' " with "PARM='DISPLAY' ". No other input is required. The output displays your current settings.

S2KGLOAD and S2KGUNLD Program Generators

The UNLOAD and LOAD program generator programs are supplied on the V1 SOURCE library. The jobs listed below are on your CNTL library after you expand the S2KIVJCL installation macro. The program generators are documented in the *Product Support Manual*.

JCLGCBGO	Execute the generated COBOL programs.
JCLGCOB	Precompile, compile, and link the generated COBOL programs.
JCLGDEF	Define a new database.
JCLGDESC	Create a DESCRIBE file and a database definition file.
JCLGENCB	Execute PL/I programs to generate the COBOL programs.
JCLGPL1	Compile and link PL/I programs.

Create EMPLOYEE and PERSONNEL Databases

The EMPLOYEE database is used for examples in SYSTEM 2000 publications, for SAS Institute training classes, and in QueX validation. Job JCLEMP creates this database. When JCLEMP is run as supplied, the EMPLOYEE database is created with definition and database cycle numbers of 3 and 1, respectively. To ensure that your output matches the examples in the publications and training class lab sessions, be sure the definition number and database cycle number are at 3 and 1 before you save the database.

The PERSONNEL database is used for examples in basic SYSTEM 2000 software publications and may also be used for certain training classes. Job JCLPERS creates the PERSONNEL database.

Other Maintenance Jobs

Four members on the SYSTEM 2000 CNTL library are described below: JCLDEL, JCLALLOC, JCLDUMP, and JCLCNVRT. These jobs are not required installation steps, and under normal circumstances they will not be needed during initial installation of the base software.

Delete Database Files Job JCLDEL deletes the database files and the disk Savefile for the EMPLOYEE database. Run this job when you are going to recreate a database and want to reallocate the database files. Be sure to supply the appropriate DBNAME parameter(s) before you submit the job.

Allocate Database Files Job JCLALLOC catalogs database Files 1 through 8 and the disk Savefile for the SYSTEM 2000 databases. Be sure to supply the appropriate DBNAME parameter(s) before you submit the job.

Dump Pages of a Database File For debugging purposes, Technical Support may request a dump of certain pages of a SYSTEM 2000 database file. Job JCLDUMP provides sample JCL to do this.

Convert Databases to Version 1 Format Databases created before Version 1 must be rebuilt in the Version 1 format. This can be done either with the UNLOAD/LOAD program generators or with the conversion program CVRTV1. Use of both methods is documented in the *Product Support Manual.* Job JCLCVRT contains sample JCL to convert a database using CVRTV1.

Multi-User Software

JCL for the Diagnostic Log

Members JCLDIAG and JCLDIAGX on the CNTL library are described below. These jobs are not required installation steps and are not needed during initial installation of the Multi-User software.

JCL to run the SYSTEM 2000 DIAG2000 program The Diagnostic Log (file S2KDIAG) provides records of events that occur during a Multi-User session. DIAG2000 is a utility that organizes this information into detailed and summary reports. Complete descriptions of these reports and how to use DIAG2000 are in the *Product Support Manual*. Job JCLDIAG provides sample JCL to execute DIAG2000.

JCL to compile and link the DIAG2000 program Job JCLDIAGX provides sample JCL to compile and link DIAG2000 after source changes are made.

Run S2OP in Batch

SYSTEM 2000 software provides a program that looks like an alternate console to Multi-User software. It is an optional service that runs in three environments: TSO, CMS, and MVS batch. S2OP is documented in Chapter 3 of the *Product Support Manual*. Job JCLS2OP provides sample JCL for running S2OP in the MVS batch environment.

Assemble and Link an XBUF table

SYSTEM 2000 software offers an Extended Buffer (XBUF) Manager feature, which allows the use of several kinds of caching techniques. This feature is documented in the *Product Support Manual*. The use of XBUF requires that XBUF macros be coded and then assembled and linked into XBUF tables. Job JCLXBUF provides sample JCL to assemble and link an XBUF table. XBUF is available for use in both single-user and Multi-User environments.

CICS Maintenance

Change the CICS Interface Parameters

The CICS module S2KCUSE is supplied with default parameters that specify required information, such as maximum number of PLEX users, maximum number of SCF users in the interface, and maximum number of terminals. These parameters have minimum and maximum values as shown below. You may need to modify one or more of these parameters.

To change these parameters, edit S2KCUSE as desired, and then reassemble S2KCUSE using job JCLCL01. S2KCUSE must be link-edited to be AMODE=31, RMODE=24.

Illus. 10.3 CICS Interface Parameters with Value Ranges

PLEX=_____

specifies the number of concurrent PLEX transactions that will be using the interface.

DEFAULT 32 RANGE 0-230

PWAITS=_____

specifies the number of one-second waits the interface will issue for a new PLEX user if all specified PLEX users are active.

DEFAULT 2 RANGE 1-10

STOPWT=_____

specifies the wait interval for PLXSTOP in one-second increments. Format is HHMMSS.

DEFAULT 20 RANGE 1 – 995959

SCF=_____

specifies the number of concurrent SCF users that will be using the interface. This refers to the SCF transactions that have commands active in the interface (i.e., URB slots).

DEFAULT 10 RANGE 0-230

MAXTERM=_____

specifies the maximum number of terminals that will be using SCF.

DEFAULT 40 RANGE 0-10000

Change PF Key Settings

New transaction S2KK provides the ability to dynamically alter PF key settings for S2KU, S2KE, and S2OP. To alter a setting, invoke the S2KK transaction and specify the environment to be altered:

```
S2KK S2KE  - changes PF keys for the S2KE transaction
S2KK S2OP  - changes PF keys for the S2OP transaction
S2KK S2KU  - changes PF keys for the S2KU transaction
```

A setting may also be altered by invoking S2KK from within the transaction itself. For a complete description of this enhancement, refer to the *SYSTEM 2000 CICS Interface Manual*.

To change the installation-wide PF key defaults, change the S2KUGEN macro and reassemble and link the S2KCUSE routine using job JCLCL01.

Source Code Maintenance

Source fixes for the CICS interface are applied with the utility IEBUPDTE. After they have been applied, the source modules must be reassembled and relinked. These three jobs on the CNTL library reassemble and link CICS modules:

- Job JCLCSCF assembles and links the modules that make up the SCF interface.
- Job JCLCPLEX assembles and links the modules that make up the PLEX interface.
- Job JCLCEDIT assembles and links the modules that make up the CICS Command Editor.

QueX Maintenance

Modify Function Key Settings

Job JCLQXPFT (Illus. 10.4) contains the default settings for the program function keys. The comments provided with the job explain how to change the default settings.

Illus. 10.4 JCLQXPFT

```
//JCLQXPFT  JOB (ACTINFO),
//    USERID,TIME=(1)
//* PF1      EQU   X'F1'       DISPLAY VALUE 'F140'
//* PF2      EQU   X'F2'       DISPLAY VALUE 'F240'
//* PF3      EQU   X'F3'       DISPLAY VALUE 'F340'
//* PF4      EQU   X'F4'       DISPLAY VALUE 'F440'
//* PF5      EQU   X'F5'       DISPLAY VALUE 'F540'
//* PF6      EQU   X'F6'       DISPLAY VALUE 'F640'
//* PF7      EQU   X'F7'       DISPLAY VALUE 'F740'
//* PF8      EQU   X'F8'       DISPLAY VALUE 'F840'
//* PF9      EQU   X'F9'       DISPLAY VALUE 'F940'
//* PF10     EQU   X'7A'       DISPLAY VALUE 'F1F0'
//* PF11     EQU   X'7B'       DISPLAY VALUE 'F1F1'
//* PF12     EQU   X'7C'       DISPLAY VALUE 'F1F2'
//************
//************
//*    PF KEYS 13 THROUGH 24 MIRROR
//*    PF KEYS 1 THROUGH 12
//************
//************
//* SELECT ONE OF THE VALUES ABOVE AND REPLACE THE
//* INDICATED VALUE IN THE @PFTABLE ZAP DECK BELOW.
//*
// EXEC PGM=IMASPZAP,PARM='IGNIDRFULL'
//SYSLIB DD DISP=SHR,DSN=S2K.V1.LOAD
//SYSPRINT DD SYSOUT=A
//SYSIN DD *
*
* THE @PFTABLE MODULE IS ZAPPED WITH THE ATTENTION
* IDENTIFIER (AID) VALUES FOR THE ASSIGNED PF KEYS.
* THESE VALUES ARE INTERPRETED AT EXECUTION TIME TO
* DETERMINE THE INPUT COMMAND OR FUNCTION FROM SCREEN
* QX04 (ITEM MENU), SCREEN QX01 (USERVIEW ID), AND
* SCREEN QX05 (RECORD MENU).
*
NAME QUEXPGM @PFTABLE
VER 0000 F200         SELECT           PFKEY 2
VER 0006 F100         HELP             PFKEY 1
VER 000C F300         EXIT             PFKEY 3
VER 0012 F400         MODIFY           PFKEY 4
VER 0018 F500         INSERT           PFKEY 5
VER 001E F600         DELETE           PFKEY 6
VER 0024 F700         BACK             PFKEY 7
```

```
VER 002A F900         SORT             PFKEY 9
VER 0030 F800         MENU             PFKEY 8
VER 0036 7C00         PAGE PLUS        PFKEY 12
VER 003C 7B00         PAGE MINUS       PFKEY 11
*
*    REPLACEMENT VALUES FOR QUEX PF KEYS
*
REP 0000 F200          AID SET FOR SELECT
REP 0006 F100          AID SET FOR HELP
REP 000C F300          AID SET FOR EXIT
REP 0012 F400          AID SET FOR MODIFY
REP 0018 F500          AID SET FOR INSERT
REP 001E F600          AID SET FOR DELETE
REP 0024 F700          AID SET FOR BACK
REP 002A F900          AID SET FOR SORT
REP 0030 F800          AID SET FOR MENU
REP 0036 7C00          AID SET FOR PAGE PLUS
REP 003C 7B00          AID SET FOR PAGE MINUS
*
* THE QXCOMCS CSECT IS ZAPPED WITH THE DISPLAY VALUES
* OF THE PF KEY ASSIGNMENTS.  THESE VALUES WILL BE
* DISPLAYED IN THE APPROPRIATE FIELDS ON THE QX04
* SCREEN DISPLAY.
*
NAME QUEXPGM QXCOMCS
VER 0004 F240            SELECT DISPLAY VALUE '2 '
VER 002A F140            HELP   DISPLAY VALUE '1 '
VER 002C F440            MODIFY DISPLAY VALUE '4 '
VER 002E F540            INSERT DISPLAY VALUE '5 '
VER 0030 F640            DELETE DISPLAY VALUE '6 '
VER 0033 F840            MENU   DISPLAY VALUE '8 '
VER 0035 F740            BACK   DISPLAY VALUE '7 '
VER 0037 F940            SORT   DISPLAY VALUE '9 '
VER 0039 F340            EXIT   DISPLAY VALUE '3 '
*
*  REPLACEMENT VALUES SHOULD REPRESENT CHARACTER
*  NOTATION OF ASSIGNED PF KEY NUMBER.
*  EXAMPLE :
*
*   IF REPLACEMENT VALUE ABOVE IS X'F4' FOR PF KEY
*   FOUR, THEN THE REPLACEMENT VALUE BELOW SHOULD BE
*   X'F440' (EBCDIC '4 ').
*
REP 0004 F240      SELECT DISPLAY CODE
REP 002A F140      HELP   DISPLAY CODE
REP 002C F440      MODIFY DISPLAY CODE
REP 002E F540      INSERT DISPLAY CODE
REP 0030 F640      DELETE DISPLAY CODE
REP 0033 F840      MENU   DISPLAY CODE
REP 0035 F740      BACK   DISPLAY CODE
REP 0037 F940      SORT   DISPLAY CODE
REP 0039 F340      EXIT   DISPLAY CODE
//
```

Appendix A: Installation Checklist

1. JOBINFO=_____

   specifies the operands to be included on all job cards produced by the S2KIVJCL macro: programmer name, job class, region size, and so forth. Maximum length is 63 characters. The entire parameter must be enclosed in single quotes. If any single quotes are to be included within the parameter, replace them with two single quotes.

   DEFAULT ''

2. ACTINFO=_____

   specifies the accounting information to be included on all job cards. All of the information supplied here must be enclosed within the parentheses. Maximum length is 57 characters.

   DEFAULT ()

3. JCL(n)=_____

   specifies any additional site-dependent JCL or any JCL comments to assist in identifying the installation jobs. There are four cards for this purpose where (n) can be values 1 through 4. The entire parameter must be enclosed in single quotes.

   NO DEFAULT

4. LOAD=_____

   specifies the full data set name of the LOAD library. This library contains all load modules necessary to run SYSTEM 2000 software. Members are listed in Appendix B.

   DEFAULT S2K.V1.LOAD

5. CNTL=_____

   specifies the full data set name of the CNTL library. The installation and validation job streams are added to this library when you assemble and execute the S2KIVJCL macro. Members are listed in Appendix D.

   DEFAULT S2K.V1.CNTL

6. SOURCE=_____

   specifies the full data set name of the SOURCE library. This library contains sample JCL, macros, validation program source, command files, and loader string data. Members are listed in Appendix C.

   DEFAULT S2K.V1.SOURCE

7. VALID=_____

   specifies the full data set name of the VALID library. This library contains validation test output for comparison with your own test results. Members are listed in Appendix E.

   DEFAULT S2K.V1.VALID

8. DBIND=_____

   specifies the high-level index for the data sets that will contain the databases. For instance, if PROD.S2K is specified, the first LIBRARY database DD statement will look like this:

   //LIBRARY1 DD DSN=PROD.S2K.LIBRARY1,DISP=OLD

   DEFAULT S2K.V1

9. DBVOL=_____

   specifies the volume serial number of the disk on which the validation databases will be allocated. This parameter must be specified.

   NO DEFAULT

10. CISIZE=_____

    specifies the database CISIZE. This value should be chosen to effectively utilize the device type track size. All CISIZEs are listed in the *Product Support Manual*.

    DEFAULT

11. PADVOL=_____

    specifies the volume serial number of the disk on which the S2KPAD00 will be allocated. This parameter must be specified.

    NO DEFAULT

12. SYSOUT=_____

    specifies the system output class that will be used for all print output.

    DEFAULT A

After you run job JCLS2KIV and members have been created on your SYSTEM 2000 CNTL library, you can use job JCLPROCL to move members to your site's PROCLIB, CLIST, and SYSHELP libraries. The next three parameters allow you to specify those library names.

13. PROCLIB=_____

    specifies the full data set name of the PROCLIB library.

    DEFAULT SYS3.PROCLIB

14. SYSPROC=_____

    specifies the full data set name of the CLIST library.

    DEFAULT SYS3.CMDPROC

15. SYSHELP=_____

    specifies the full data set name of the SYSHELP library.

    DEFAULT SYS3.HELP

16. WRKUNIT=_____

    specifies the unit device type for all work files.

    DEFAULT SYSDA

17. LINKPGM=_____

    specifies the name of the linkage editor.

    DEFAULT IEWL

18. ASMPGM=_____

    specifies the name of the assembler.

    DEFAULT ASMA90

19. COBPGM=_____

    specifies the name of the COBOL compiler.

    DEFAULT IGYCRCTL

20. COBLIB=_____

    specifies the name of the system COBOL load library. This library is required for linking a COBOL program.

    DEFAULT SYS1.COBLIB

21. FORTPGM=_____

    specifies the name of the VS FORTRAN (R2 or greater) compiler.

    DEFAULT FORTVS

22. PL1PGM=_____

    specifies the name of the PL/I compiler.

    DEFAULT IEL0AA

23. PL1LIB=_____

    specifies the name of the system PL/I load library. This library is required for linking a PL/I program.

    DEFAULT SYS1.PL1BASE

24. BASE=_____

    specifies you are installing the base SYSTEM 2000 software. Values are YES or NO.

    DEFAULT YES

25. MUP=_____

    specifies you are installing the Multi-User software. Values are YES or NO.

    DEFAULT YES

26. ACTIND=_____

    specifies the high-level index for the data sets that will be the Accounting Log files. If you specify S2K.V1.ACCOUNT, the Accounting Log file names will be S2K.V1.ACCOUNT.MANX and S2K.V1.ACCOUNT.MANY.

    DEFAULT S2K.V1.ACCOUNT

27. ACTVOL=_____

    specifies the volume serial of the disk on which the Accounting Log files will be allocated.

    NO DEFAULT

28. ACTCYL=_____

    number of cylinders to assign primary disk space for MANX and MANY

    DEFAULT is 10

29. ACTUNIT=_____

    specifies the unit device type of the disk on which the Accounting Log files will be allocated.

    DEFAULT SYSDA

30. ACTBLK=_____

    specifies the block size of the Accounting Log files when they are built and when they are dumped to tape or disk.

    DEFAULT 9076

31. SVCNUM=_____

    specifies the SVC number, which your systems programmer must supply. The number must be from the valid range of 200 through 255

    NO DEFAULT

32. XMS=_____

    specifies that you are installing XMS Multi-User. Values are YES or NO.

    DEFAULT YES

33. AUTH=_____

    specifies the authorized library, designated by your systems programmer, to which load modules S2KCMC and S2KPC are to be copied.

    DEFAULT S2K.V1.AUTH

34. S2KCOM=_____

    specifies the full data set name of the 30-byte file S2KCOM.

    DEFAULT S2K.V1.COM

35. XMSVOL=_____

    specifies the volume serial of the disk on which the S2KCOM file is to be allocated.

    NO DEFAULT

36. CICS=_____

    specifies you are installing the CICS interface. Values are YES or NO.

    DEFAULT YES

37. S2KLIB=_____

    specifies the name of the VSAM S2KLIB for the Command Editor and maintain individual PF key settings.

    DEFAULT S2K.CICS.S2KLIB

38. CICSMAC=_____

    specifies the name of the CICS macro library. This library is included to pick up CICS macros required for assembling the interface.

    DEFAULT CICS.MACLIB

39. CICSLOAD=_____

    specifies the name of the CICS load library. This library, which contains the language translators, is referenced in the link-edit step in the validation program(s).

    DEFAULT CICS.LOADLIB

40. CICSCOB=_____

    specifies the name of the CICS COBOL copy library. This library is required for linking a CICS COBOL program.

    DEFAULT CICS.COBLIB

41. CICSPL1=_____

    specifies the name of the CICS PL/I load library. This library is required for linking a CICS PL/I program.

    DEFAULT CICS.PL1LIB

42. SYS1MAC=_____

    specifies the name of the system macro library. This library is included to pick up system macros that are required to assemble the interface.

    DEFAULT SYS1.MACLIB

43. SYS1MOD=_____

    specifies the name of the system generation macro library. This library is included to pick up system macros that are required to assemble the interface.

    DEFAULT SYS1.MODGEN

44. QUEX=_____

    specifies that you are installing the QueX software. Values are YES or NO.

    DEFAULT YES

Appendix B: Library S2K.V1.LOAD

The following list shows the load modules on S2K.V1.LOAD. All of these modules are generated via the standard IBM linkage editor. Interpret the Mode column as follows: blank means AMODE=24, RMODE=24. A31 means AMODE=31, RMODE=24. R31 means AMODE=31, RMODE=ANY.

Abbreviations:

A	- Assembler PLEX	P	- PL/I PLEX
AL	- Accounting Log	QueX	- QueX Software
ALL	- All features or special functions	RB	- Rollback (Recovery)
C	- COBOL PLEX	RW	- Report Writer
CICS	- CICS Interface	SCF	- Self-Contained Facility
F	- FORTRAN PLEX	SU	- single-user
MT	- Multi-Thread	USI	- Universal Software Interface
MU	- Multi-User		

Module Name	Required by	Mode	Entry Point	Description
$AVOPTS	ALL		$AVOPTS	Routine to load S2KSETI at execution time
@ADABEND	QueX	A31	ADABEND	QueX load module
@ADCATIO	QueX	A31	ADCATIO	QueX load module
@ADTRMIO	QueX	A31	ADTRMIO	QueX load module
@CMSEDTR	QueX	A31	CMSEDTR	QueX load module
@SAS	ALL			Copyright statement
ACTCMD	AL			Accounting load module
ACTCOM	AL			Accounting load module
ACTDBO	AL			Accounting load module
ACTERM	AL			Accounting load module
ACTIO	AL			Accounting load module

Module Name	Required by	Mode	Entry Point	Description
ACTIPL	AL			Accounting load module
ACTIVATE	AL			Accounting load module
ACTQUAL	AL			Accounting load module
ACTUSI	AL			Accounting load module
ACTUST	AL			Accounting load module
ACTUTIL	AL		ACTUTIL	Utility routine to format and dump MU Accounting Log files
ADCATCTL	QueX	A31	ADCATCTL	QueX load module
ADESTERM	QueX	A31	ADESTERM	QueX load module
AQUMAIN	AL			Accounting load module
AQUSORT	AL			Accounting load module
ARPDATE	AL			Accounting load module
ARPMAIN	AL			Accounting load module
ARPTIME	AL			Accounting load module
ASMCCL	CICS	R31	ASMCCL	Assembler validation program
CFIND	ALL	A31	CFINDCH	Hierarchical Table (HT) validation program
CLEARS2K	MU		CLEARS2K	Utility routine to clear tables kept in Type 2 SVC for MU
CLUDUMP	CICS	R31	CLUDUMP	UDMP transaction module
COBCCL	CICS	R31		COBOL command-level validation program
CONVERT	CICS	R31	CONVERT	Command Editor module
CVRTV1	ALL	A31	CVRTV1	Database conversion program
DFHPEP	CICS	R31	DFHPEP	Program Error Program

Module Name	Required by	Mode	Entry Point	Description
DIAG2000	MU		DIAG2000	Program to produce reports from the SYSTEM 2000 Diagnostic Log
DUMPXX	UTILITY		DUMPXX	Program to snap dump selected pages of a file
EDJRNL	CICS	R31	EDJRNL	Command Editor module
EXAMINDX	UTILITY		EXAMINDX	Program to compare index pages with data pages
EXAMINE	UTILITY		EXAMINE	Program to validate data values and report overflow
FINDACT	AL			Accounting load module
FINDMSG	QueX	A31	FINDMSG	QueX load module
FORMATSK	ALL	A31	FORMATSK	Subtask to format database file
F2BUILD	UTILITY		F2BUILD	Program to rebuild File 2
GENIUS	GENIUS		GENIUS	Genius executable module
GETNXLEX	CICS	R31	GETNXLEX	Command Editor module
GOTOSAS	ALL	A31	GOTOSAS	Module with information about PLEX programs and communications with the SAS System – MU
GOTOSASS		A31		Alias of GOTOSAS – SU
IDTRANS	QueX	A31	IDTRANS	QueX load module
INDEXPPT	UTILITY		INDEXPPT	Program to validate index Files 2 and 4
IOAID	CICS	R31	IOAID	Command Editor module
IOCTRL	CICS	R31	IOCTRL	Command Editor module
IOMEMBR	CICS	R31	IOMEMBR	Command Editor module
LOADTSK	ALL	A31	LOADTSK	Subtask to restore a saved database

Module Name	Required by	Mode	Entry Point	Description
LOGDUMP	UTILITY		LOGDUMP	Utility program to selectively print MU Diagnostic Log
MUPLINT	C,P,F, or A under MU		MSYSTM2	Interface used for runtime communication between MU and PLEX program (loaded by S2KPLR)
NO522	MU	R31	NO522	Subtask attached by both MU region and dependent region to prevent OS 522 abends
OPENWAIT	USI	A31	OPENWAIT	Subtask to open a Keepfile or TAPES2K DCB
OSMACROS	AL			Accounting load module
OUTBLD	CICS	R31	OUTBLD	Command Editor module
PARSPARM	AL			Accounting load module
PARSTBL	AL			Accounting load module
PLXFRMT	CICS	R31	PLXFRMT	PLEX format module
PLXPBLD	CICS	R31	PLXPBLD	PLEX module linked with user application
PLXTRUE	CICS	R31	PLXTRUE	PLEX check for missing STOP S2K program
PL1CCL	CICS			PL/I validation program
PRCOMA	A		MAIN	Assembler language PLEX processor
PRCOMC	C		MAIN	COBOL language PLEX processor
PRCOMF	F		MAIN	FORTRAN language PLEX processor
PRCOMP	P		MAIN	PL/I language PLEX processor
QAEXIT	UTILITY	R31	QAEXIT	Timing and I/O statistics routine for SCF

Module Name	Required by	Mode	Entry Point	Description
QASTAT	UTILITY	R31	QAEXIT	Timing and I/O statistics routine for PLEX. Alias of QAEXIT.
QUBAPAR	QueX	A31	QUBAPAR	QueX load module
QUEXPGM	QueX		QUEXSTRT	QueX executable module under TSO
QUEXSCRN	QueX		QUEXSCRN	QueX load module
QUEXSTRT	QueX	A31	QUEXSTRT	QueX initialization routine
QULINK	QueX	A31	QULINK	QueX load module
QUS2KP	QueX	A31	QIS2LP	QueX load module
QUTBLD	QueX	A31	QUTBLD	QueX load module
QUVBPGM	QUVB		QUVBCTL	QUVB executable module
QUVBSCRN	QUVB		QUVBSCRN	QUVB application screens - QB01, QB03, LK01
QUWHCC	QueX	A31	QUWHCC	QueX load module
QXBLDMNU	QueX	A31	QXBLDMNU	QueX load module
QXBLDSCR	QueX	A31	QXBLDSCR	QueX load module
QXCNTL	QueX	A31	QXCNTL	QueX load module
QXCTRL	QueX	A31	QXCTRL	QueX load module
QXINIT	QueX	A31	QXINIT	QueX load module
QXPARS	QueX	A31	QXPARS	QueX load module
QXRDMENU	QueX	A31	QXRDMENU	QueX load module
QXRDSCR	QueX	A31	QXRDSCR	QueX load module
QXSCRMGR	QueX	A31	QXSCRMGR	QueX load module
QXSCRTAB	QueX		QXSCRTAB	Generate application screen tables
QXUTIL	QueX	A31	QXUTIL	QueX load module

Module Name	Required by	Mode	Entry Point	Description
QX1009 – QX1016	QueX		QX1009 – QX1016	Help screens
QX1018 – QX1105	QueX		QX1018 – QX1105	Help screens
RECHAIN	RECHAIN		RECHAIN	File 5 reusable space chain verification program
RWTCOM01		R31	RWTCOM	Data area used by REPORT processor
SASASCE	S2K		SASASCE	Assembler PLEX validation program
SASCBCE			SASCBCE	COBOL PLEX validation program
SASFOCE		R31	SASFOCE	FORTRAN PLEX validation program
SASPLCE		R31	SASPLCE	PL/I PLEX validation program
SAVECHK	S2K		SAVECHK	Savefile verification program
SAVETSK	ALL	A31	SAVETSK	Subtask to save a database
SCFDRVR	CICS	R31	SCFDRVR	SCF driver module
SCFERROR	CICS	R31	SCFERROR	SCF error message text module
SCFINTF	CICS	R31	SCFINTF	SCF interface module
SCFPGBD	CICS	R31	SCFPGBD	SCF page build module
SCFPGMG	CICS	R31	SCFPGMG	SCF page management module
SETMODE	CICS	R31	SETMODE	Command Editor module
SMCNTL	SMON		SMCNTL	Alias of SMON
SMON			SMCNTL	Utility to reenter Session Manager after exiting the QueX software or QUVB
SYS2K	SCF-SU ALL-MU	R31	S2K	Executable module used by SCF users in SU and by all users in MU

Module Name	Required by	Mode	Entry Point	Description
SYS2KJOB	SCF under MU		MSYS2K	Interface used for runtime communication between SYSTEM 2000 software and SCF user in MU; location of user files
SYS2KTPI	SCF under MU (TSO only)		SCFTP2I	Interface used for runtime communication between SYSTEM 2000 software and SCF user in MU using TSO foreground; allows LOCAL files as well as user files in MU and has local output file
SYS2KTSO	SCF under MU (TSO only)		SCFTP2I	Alias of SYS2KTPI
S2CONSOL	MU	A31	S2CONSOL	Subtask to wait on console MODIFY command
S2EXIT	USI		S2EXIT	SYSTEM 2000 interface to user-exit code
S2KACCT	ALL	A31	ACTIPL	MU Accounting Log routine; loaded by MU (S2000) if Accounting enabled
S2KADRC	CICS	R31	S2KADRC	SYSTEM 2000 SVC communication module
S2KCMC	XMS	A31	S2KCMC	Control program to set up XMS environment and initialize MU for XMS
S2KCOPY	MU under SVS, MVS, TSO or a fetch-protected system	A31	S2KCOPY	MU SVC routine to move data areas from one region to another (if required, must be linked into SCP nucleus) protected system
S2KCUSE	CICS	A31	S2KCUSE	CICS user module
S2KDBAP	XBUF	A31	S2KXBUF	Alias of S2KXBUF
S2KDLT	CICS	R31	S2KDLT	Command Editor module

Module Name	Required by	Mode	Entry Point	Description
S2KDMV6	SCF under SAS	A31	S2KDMV6	Interface used to invoke Version 6 of the SAS system
S2KDSPL	CICS	R31	S2KDSPL	Command Editor module
S2KEDTRT	CICS	R31	S2KEDTRT	Command Editor module
S2KEND	CICS	R31	S2KEND	Command Editor module
S2KEPROC	CICS	R31	S2KEPROC	Command Editor module
S2KERR	CICS	R31	S2KERR	Command Editor module
S2KEXIN	USI		S2KEXIN	EXIT00 code for user-exit methodology
S2KEX07			S2KEXIN	Sample User Exit
S2KEX13			S2KEXIN	Sample User Exit
S2KEX42			S2KEXIN	Sample User Exit
S2KEX45			S2KEXIN	Sample User Exit
S2KFIND	CICS	R31	S2KFIND	Command Editor module
S2KGET	CICS	R31	S2KGET	Command Editor module
S2KGLOAD	UTILITY	R31	LOADGEN	COBOL PLEX load program generator
S2KGUNLD	UTILITY	R31	UNLDGEN	COBOL PLEX unload program generator
S2KIDCM	ALL		S2KIDCM	Dynamic allocation of VSAM files
S2KINS	CICS	R31	S2KINS	Command Editor module
S2KIO	ALL	A31	S2KIO	I/O coordination routine (loaded by module S2K for SU and by SUPS2K for MU)
S2KLIST	CICS	R31	S2KLIST	List transaction module

Module Name	Required by	Mode	Entry Point	Description
S2KLISTD	CICS	R31	S2KLISTD	Command Editor module
S2KLOG	CICS	R31	S2KLOG	Writes CICS destination S2KL
S2KMDFY	CICS	R31	S2KMDFY	Command Editor module
S2KMRO	CICS	R31	S2KMRO	Processes terminal abends in a MRO environment
S2KPC	XMS	A31	S2KPC	Routine to handle interregion communication in an XMS environment
S2KPFKY	CICS	R31	S2KPFKY	User PF key definitions module
S2KPL	C,P,F, or A	R31	S2KPL	Interface used by PLEX programs at run time (linked with user's program; loads S2KPLR at run time)
S2KPLR	C,P,F, or A	A31	S2KPLR	Interface used in run time communication between SYSTEM 2000 software and PLEX programs (loaded by S2KPL at run time; loads S2KPLI in SU and loads MUPLINT in MU)
S2KPTR	CICS	R31	S2KPTR	Command Editor module
S2KSAVE	CICS	R31	S2KSAVE	Command Editor module
S2KSBMT	CICS	R31	S2KSBMT	Command Editor module
S2KSCR	CICS	R31	S2KSCR	Command Editor module
S2KSEND	CICS	R31	S2KSEND	Command Editor module
S2KSETI	ALL		S2KSETI	Independent utility to authorize new SAS Institute Program Products and renew authorization for currently licensed products
S2KSETPF	CICS	R31	S2KSETPF	Command Editor module

Module Name	Required by	Mode	Entry Point	Description
S2KSIP	ALL	A31	S2KSIP	Routine to initialize SYSTEM 2000 work areas (loaded by SYS2K or S2KPLI at initialization time; loads S2KPARM)
S2KTERM	CICS	R31	S2KTERM	CICS interface termination routine
S2KXBUF	XBUF	A31	S2KXBUF	Control program to execute XBUF
S2OP	MU		S2OP	Alternate console routine
S2OPJOB	MU		S2OP	Alias of S2OP
S2OPTSO	MU		S2OP	Alias of S2OP
S2000	MU	R31	SUPS2K	MU routine to schedule SYSTEM 2000 usage for batch and TP users
TIMDAT	UTILITY		TIMDAT	Assembly load module routine linked with MU validation programs
TRDCOM01	SCF,C,P, F or A	R31	TRDCOM	Data area used by non-RW system
UPKEEP	UTILITY		UPKEEP	Routine to inspect Update Log and Keepfile
USERCOM	ALL	R31	USERCOM	User communication block (loaded by SYS2K or S2KPLI from LOAD library)
USERID	CICS	R31	USERID	Command Editor module
WAITUNIT	ALL	A31	WAITUNIT	Subtask to wait for a SAVE unit
XBUFTBL	XBUF		XBUFTBL	Pregenerated XBUF table

Appendix C: Library S2K.V1.SOURCE

Member Name	Description
#ADPFKEQ	QueX macro
#PLIDATA	Parameter list copy member for PLEX calls to SYSTEM 2000 software
ACTIO	Multi-User accounting I/O source program
AID	Macro
AQUMAIN	Multi-User Accounting Log qualifying program
ARPMAIN	Multi-User Accounting Log report program
ASMCCL	Assembler validation source program
AUTHFUNC	Macro
BACKSAVE	Macro
BUILDPCI	Macro
CATDATA	QUEXCATALOG database loader string data
CATDEFIN	QUEXCATALOG database command file
CHAIN	Macro
CLMASMC	Installation macro to generate job JCLCL04
CLMASML	Installation macro to generate job JCLCL01
CLMCOBC	Installation macro to generate job JCLCL02
CLMPL1C	Installation macro to generate job JCLCL03
CLMUIDZ	Installation macro to generate job JCLCLUZ
CLUDUMP	S2KCUSE dump program
CLUIDZAP	Zap cards for job JCLCLUZ
COBCCL	COBOL command-level validation program
COCHK	Macro to validate a component number
COEDIT	Macro to initiate value table generation for a component
COMDS	Macro
CONVERT	CICS command-level conversion routine
COPYRITE	Copyright notice
COVALUE	Macro to generate a component value table entry
CSDQUEX	CICS RDO table definitions for QueX software
CTRLDFLT	Macro
CTRLREC	Macro
DAID3270	CICS interface SCF PF key settings
DEFEREGS	Macro
DEXTPARM	Macro for generating USI (S2EXIT)
DIAG2000	COBOL source utility to produce Diagnostic Log summary reports
DIRA	Macro for SVC assembly
DJOBQ	Macro for SVC assembly
DOPERAID	Macro
DPLRBLKS	Macro
DRVRSTRG	Macro
DSCFERR	Macro
DSCHCVT	Macro for SVC assembly

Member Name	Description
DSTACE	Macro
DSTOPPRM	Macro
DSVCTBL	Macro for SVC assembly
DS2KCUSE	Macro
DS2KLOG	CICS macro
DS2KPCI	Macro
DUCB	Macro
DUMPXX	Source program to snap dump selected pages of a file
DURB	Macro for SVC assembly
DURBMU	Macro
EDITCOM	CICS macro
EDJRNL	CICS Command Editor module
EDMEMBR	CICS macro
EMPDEFIN	Command File to create EMPLOYEE database
EMP1DATA	First loader string data for EMPLOYEE database
ENTERMU	Macro
EQUREGS	Macro
EXITAREA	Macro to define areas used by user-exit routines
EXITBGN	User-exit prologue macro
EXITEND	User-exit epilogue macro
EXTPARM	Macro to define user-exit parameter list
EXTWAIT	Macro used in generating user-exit interface
FINDPCI	Macro
FINDSTAC	Macro
FINDTERM	Macro
FINDURBS	Macro
FREESTAC	Macro
FREEURB	Macro
GENPCI	Macro
GENROUT	Macro
GENSTACT	Macro
GENURBS	Macro
GENURB1	Macro
GETNXLEX	CICS Command Editor module
GETURB	Macro
GVTNOTE	Restricted Rights Legend
HXDIGIT	Macro to convert decimal SVC number to hexadecimal
IDUSER	Macro
INITMU	Macro
IOAID	CICS Command Editor module
IOCTRL	CICS Command Editor module
IOMEMBR	Assembler interface program
JCLGENER	JCL to unload media file JCLINST
JCLINST	JCL to allocate and unload all delivery media files
JCLS2KIV	JCL to assemble and execute installation macro S2KIVJCL

Member Name	Description
KEYTABLE	CICS Command Editor macro
LIBDEFN	Command File to create LIBRARY database and run SCF validation
LIBLDER	Loader string data for LIBRARY database
LISTSCRN	Macro
LSTCOMM	Macro
MACACT	Macro to generate job JCLACT
MACACTDB	Macro to generate job JCLACTCB
MACALLOC	Macro to generate job JCLALLOC
MACAQURU	Macro to generate job JCLAQURU
MACARPRU	Macro to generate job JCLARPMU
MACASM	Macro to generate job JCLASM
MACBACK	Macro to generate job JCLBACK
MACBSS2K	Macro to generate proc SASS2K
MACB2KMU	Macro to generate proc S2KMU
MACB2KSU	Macro to generate proc S2KSU
MACCEDIT	Macro to generate job JCLCEDIT
MACCFIND	Macro to generate job JCLCFIND
MACCICS	Macro to generate job JCLCICS
MACCIZAP	Macro to generate job JCLCIZAP
MACCNVRT	Macro to generate job JCLCNVRT
MACCOB	Macro to generate job JCLCOB
MACCPLEX	Macro to generate job JCLCPLEX
MACCSCF	Macro to generate job JCLCSCF
MACCSDU	Macro to generate job JCLCSDU
MACDEL	Macro to generate job JCLDEL
MACDEMO	Macro to generate DEMOFILE CLIST
MACDIAG	Macro to generate job JCLDIAG
MACDIAGX	Macro to generate job JCLDIABX
MACDOC	Macro to generate job JCLDOC
MACDUMP	Macro to generate job JCLDUMP
MACEMP	Macro to generate job JCLEMP
MACEXAM	Macro to generate job JCLEXAM
MACEXINX	Macro to generate job JCLEXINX
MACEXIT	Macro to generate job JCLEXIT
MACFFDI	Macro to generate job JCLFFDI
MACFORT	Macro to generate job JCLFORT
MACFRDB	Macro to generate S2KFRDB CLIST
MACFRDBH	Macro to generate S2KFRDB help file
MACF2BLD	Macro to generate JCLF2BLD
MACF5CNT	Macro to generate job JCLF5CNT
MACGCBGO	Macro to generate job JCLGCBGO
MACGCOB	Macro to generate job JCLGCOB
MACGDEF	Macro to generate job JCLGDEF
MACGDESC	Macro to generate job JCLGDESC
MACGENCB	Macro to generate job JCLGENCB
MACGENIH	Macro to generate Genius help file
MACGNIUS	Macro to generate Genius CLIST

Member Name	Description
MACGPL1	Macro to generate job JCLGPL1
MACINST	Macro to generate job JCLIST
MACINDX	Macro to generate job JCLINDX
MACMU	Macro to generate job JCLMU
MACMUDEP	Macro to generate job JCLMUDEP
MACMUFIL	Macro to generate job JCLMUFIL
MACMUPLX	Macro to generate job JCLMUPLX
MACPEP	Macro to generate job JCLPEP
MACPERS	Macro to generate job JCLPERS
MACPL1	Macro to generate job JCLPL1
MACPROCL	Macro to generate job JCLPROCL
MACRELNK	Macro to generate job JCLRELNK
MACSAS2K	Macro to generate SASS2K CLIST
MACSCF	Macro to generate job JCLSCF
MACSET	Macro to generate job JCLSET
MACSS2KH	Macro to generate SASS2K help file
MACSVC	Macro to generate job JCLSVC
MACS2K	Macro to generate S2K CLIST
MACS2KH	Macro to generate S2K help file
MACS2KM	Macro to generate Multi-User clist
MACS2KMH	Macro to generate Multi-User help
MACS2KLN	Macro to generate job JCLS2KLN
MACS2OP	Macro to generate job JCLS2OP
MACVALID	Macro to generate job JCLVALID
MACVSAM	Macro to generate job JCLVSAM
MACXAUTH	Macro to generate job JCLXAUTH
MACXBUF	Macro to generate job JCLXBUF
MACZAP	Macro to generate job JCLZAP
MAC2KFR	Macro to generate job S2KFREE CLIST
MA2KFRH	Macro to generate S2KFREE help file
MAPAID	Macro
MQXALCAT	Macro to generate job JCLALCAT
MQXQUEX	Macro to generate QUEX CLIST
MQXQUEXH	Macro to generate QUEXH help file
MQXQUVB	Macro to generate QUVB CLIST
MQXQUVBH	Macro to generate QUVBH help file
MQXZAP	Macro to generate job JCLQXZAP
MRIASMC	Assembler validation source program
MRISVC	Macro for SVC assembly
MUSVC	Assembler interface program
NLERRORS	Macro
OAID	Macro
OPENWAIT	Assembler program for Special Zap 161
OUTBLD	CICS Command Editor module
OUTTERM	CICS Command Editor module
PARSE	Macro for XBUF assembly

Member Name	Description
PERSDEFN	Command File to create PERSONNEL database
PERSLDER	Loader string data for PERSONNEL database
PGMST	Macro for Multi-User Accounting Log programs
PLIINPUT	Input records to drive PLEX validation programs
PLXCOMA	Macro
PLXCOMC	Macro
PLXCOMP	Macro
PLXFRMT	CICS command-level PLEX module
PLXPBLD	CICS command-level PLEX module
PLXTRUE	STOP S2K for procedural language Users
PL1CCL	PL/I command-level validation program
PUBDEFN	Command File to create PUBLISHERS database
PUTONQ	Macro for SVC assembly
ROLBACK1	Command File for rollback validation
ROLBACK2	Command File for rollback validation
ROLBACK3	Command File for rollback validation
SASASCE	Assembler source program for Assembler PLEX test
SASCBCE	COBOL source program for COBOL PLEX test
SASFOCE	VS FORTRAN source program for FORTRAN PLEX test
SASPLCE	PL/I source program for PL/I PLEX test
SCFCOMM	Macro
SCFDRVR	CICS command-level SCF module
SCFERROR	CICS command-level SCF module
SCFINTF	CICS command-level SCF module
SCFPGBD	CICS command-level SCF module
SCFPGMG	CICS command-level SCF module
SETBTEXT	S2KSETI parameters
SETCTEXT	S2KSETI parameters
SETEXIT	Macro to enable and address one or more user exits
SETMODE	CICS Command Editor module
SETMTEXT	S2KSETI parameters
SETQTEXT	S2KSETI parameters
SETREV	Assembler macro used during assembly of ALC routines
SETSTACE	Macro
SETUPCI	Macro
SZ	SYSTEM 2000 special zaps
S2ABEND	Macro
S2GMAIN	Macro
S2IDUSR	Macro
S2INLOC	Macro
S2KADRC	SVC communication module
S2KCSD	CICS RDO table definitions
S2KCUSE	Assembler source for CICS user module
S2KDCT	CICS table for Destination Control Table
S2KDLT	CICS Command Editor module
S2KDSPL	CICS Command Editor module
S2KEDTRT	CICS Command Editor module

Member Name	Description
S2KEND	CICS Command Editor module
S2KEPROC	CICS Command Editor module
S2KERR	CICS Command Editor module
S2KEXIN	Source for S2KEXIN to implement user exit methodology
S2KEX07	User-exit source to specify multiple local hold buffer size
S2KEX13	User-exit source to inspect input SCF records
S2KEX42	User-exit source to clean up resources acquired by user exits
S2KEX45	User-exit to interface with RACF
S2KFIND	CICS Command Editor module
S2KGET	CICS Command Editor module
S2KGLOAD	PL/I source program for COBOL load program
S2KGUNLD	PL/I source program for COBOL unload program
S2KINS	CICS Command Editor module
S2KIVJCL	Macro to generate all installation JCL
S2KLIST	CICS list transaction module
S2KLISTD	CICS Command Editor module
S2KLOG	CICS program to display error activities
S2KMDFY	CICS Command Editor module
S2KMRO	CICS program to handle DFHZNEP errors in AOR's
S2KOSCRN	CICS interface screen input utility program
S2KPEP	Assembler interface program for Program Error Program
S2KPFKY	CICS user PF key definition module
S2KPGBLD	Macro
S2KPTR	CICS Command Editor module
S2KRESET	CICS command-level utility program
S2KRETRN	CICS Command Editor module
S2KSAVE	CICS Command Editor module
S2KSBMT	CICS Command Editor module
S2KSCR	CICS Command Editor module
S2KSEND	CICS Command Editor module
S2KSETPF	CICS Command Editor module
S2KSRT	CICS table for System Recovery Table
S2KSVC	Macro
S2KTERM	CICS program to terminate a user from Multi-User
S2KUGEN	Macro
S2KZNEP	Additional Network Error Program statements
S2LOCK	Macro
S2RTRN	Macro
S2TWRIT	Macro
S2WTO	Macro
S2WTOMSG	Macro
TESTRW1	Command File for Report Writer validation
TGEN	Macro
TRACER	Macro
UPKEEP	Source program for Update Log and Keepfile inspection
USERID	CICS Command Editor module
USERTWA	Macro

Member Name	Description
USERVSWA	Macro
VERNO	Macro
VRBTABLE	Macro
XB	Macro for XBUF assembly
XBDD	Macro for XBUF assembly
XBDDADD	Macro for XBUF assembly
XBDDVER	Macro for XBUF assembly
XBLKSIZE	Macro for XBUF assembly
XBMEMORY	Macro for XBUF assembly
XBNUM	Macro for XBUF assembly
XBUF	Macro for XBUF assembly
XBUFCB	Macro for XBUF assembly
XBUFTBL	Sample XBUF table
XBUFX0	Macro for XBUF assembly
XBUFX1	Macro for XBUF assembly
XBUFX2	Macro for XBUF assembly
XEQUREGS	Macro for register equ's

Appendix D: Library S2K.V1.CNTL

These members are added to your CNTL library when you run job JCLS2KIV.

Member Name	Description
DEMOFILE	CLIST to set up demo database files
GENIUS	CLIST to execute Genius validation CLISTs
GENIUSH	Help file for Genius
JCLACT	JCL to build Accounting Log files
JCLACTCB	JCL to COBOL II compile and link AQUMAIN and ARPMAIN
JCLALCAT	JCL to create QUEXCATALOG database
JCLALLOC	JCL to preallocate validation database files
JCLAQURU	JCL to execute AQUMAIN program
JCLARPRU	JCL to execute ARPMAIN program
JCLASM	JCL to validate Assembler PLEX
JCLBACK	JCL to create backup tape
JCLCEDIT	JCL to assemble/link Command Editor programs
JCLCFIND	JCL to execute the CFIND program
JCLCICS	JCL to be added to your CICS startup deck
JCLCIZAP	JCL to zap SVCADR in the CICS interface
JCLCLUZ	JCL to zap userid for S2KEDIT
JCLCL01	JCL to assemble/link interface programs
JCLCL02	JCL to compile/link COBOL command-level programs
JCLCL03	JCL to compile/link PL/I command-level programs
JCLCL04	JCL to assemble/link assembler command-level validation
JCLCNVRT	JCL to convert databases to Version 1
JCLCOB	JCL to validate COBOL PLEX
JCLCPLEX	JCL to assemble/link CICS PLEX modules
JCLCSCF	JCL to assemble/link CICS SCF modules
JCLCSDU	JCL to update the CICS DFHCSD File
JCLDEL	JCL to delete validation database files
JCLDIAG	JCL to compile and link DIAG2000
JCLDIAGX	JCL to execute DIAG2000
JCLDOC	JCL to print installation instructions
JCLDUMP	JCL to execute the DUMPXX program
JCLEMP	JCL to create EMPLOYEE database
JCLEXAM	JCL to execute the EXAMINE overflow program
JCLEXINX	JCL to execute the EXAMINDX program
JCLEXIT	JCL to assemble exits 7, 14 and 32
JCLFFDI	JCL to copy a field fix distribution to disk
JCLFORT	JCL to validate FORTRAN PLEX (VS FORTRAN R2 and greater)
JCLF2BLD	JCL to execute the F2BUILD program
JCLF5CNT	JCL to execute the RECHAIN program
JCLGCBGO	JCL to execute the generated COBOL UNLOAD and LOAD programs

Member Name	Description
JCLGDEF	JCL to define a database using DESCRIBE/DEFINE output
JCLGDESC	JCL to create files for DESCRIBE and DESCRIBE/DEFINE output
JCLGENCB	JCL to generate the COBOL UNLOAD and LOAD programs
JCLGPL1	JCL to compile and link S2KGLOAD and S2KGUNLD
JCLINDX	JCL to execute the INDEXRPT program
JCLINST	JCL to allocate and unload all delivery media files
JCLMU	JCL to initialize Multi-User software
JCLMUDEP	JCL to validate Multi-User software
JCLMUFIL	JCL to allocate permanent S2KPADnn and S2KUSERS files
JCLMUPLX	JCL to validate Multi-User PLEX
JCLPEP	JCL to assemble DFHPEP
JCLPERS	JCL to create PERSONNEL database
JCLPL1	JCL to validate PL/I PLEX
JCLPROCL	JCL to copy CLISTs, JCL procs, and help files to site libraries
JCLQXPFC	JCL to zap QueX PF key settings for CICS
JCLQXPFT	JCL to zap QueX PF key settings for TSO
JCLQXZAP	JCL to zap Multi-User SVC number in QueX
JCLRELNK	JCL to clear the IDR table in a load module
JCLSCF	JCL to validate SCF and RW
JCLSET	JCL to execute S2KSETI utility
JCLSVC	JCL to assemble and install Multi-User SVC (SVC Multi-User only)
JCLS2KLN	JCL to link S2EXIT with SYS2K
JCLS2OP	JCL to execute the S2OP program
JCLVALID	JCL to list the contents of the VALID library
JCLVSAM	JCL to create a VSAM file
JCLXAUTH	JCL to install XMS SYSTEM 2000 code (XMS Multi-User only)
JCLXBUF	JCL to create an XBUF table
JCLZAP	JCL to apply zap for Multi-User SVC number
MUPARM	Multi-User execution parameters
NLPARM	Execution parm data set for validation
QUEX	CLIST to execute the QueX software
QUEXH	QueX CLIST help file
QUVB	CLIST to execute the QueX User View Builder
QUVBH	QUVB CLIST help file
RWPARM	Execution parm data set for RW validation without USI
SASS2K	CLIST to execute SAS software and allocate SYSTEM 2000 files
SASS2KH	Help file for SASS2K CLIST
SASS2KP	JCL proc to execute SAS software and allocate SYSTEM 2000 files
S2K	CLIST to execute SYSTEM 2000 software
S2KFRDB	CLIST to free database files
S2KFRDBH	Help file for S2KFRDB CLIST
S2KFREE	CLIST to free non-database SYSTEM 2000 files
S2KFREEH	Help file for S2KFREE CLIST
S2KH	Help file for S2K CLIST
S2KM	CLIST for Multi-User dependent region SCF

Member Name	Description
S2KMH	Help file for S2KM CLIST
S2KMUP	JCL proc to execute SYSTEM 2000 Multi-User interface
S2KSUP	JCL proc to execute SYSTEM 2000 software

Appendix E: Library S2K.V1.VALID

Member Name	Description
ASMVAL	Output from Assembler PLEX validation
COBVAL	Output from COBOL PLEX validation
FORTVAL	Output from FORTRAN PLEX validation
PL1VAL	Output from PL/I PLEX validation
SCFVAL	Output from SCF validation

Your Turn

If you have comments or suggestions about the *Installation Instructions for SYSTEM 2000 Software, Version 1 under OS/390*, please send them to us on a photocopy of this page or send e-mail to S2K@SAS.COM.