

Peregrine

ServiceCenter

Client/Server Installation Guide for OS/390

Release 5.1

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This edition applies to version 5.1 of the licensed program.

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Contents

	Introducing the Client/Server Installation Guide for OS/390	7
	Knowledge Requirements	8
	Contacting Customer Support	9
	Peregrine's CenterPoint Web site	9
	Corporate Headquarters	9
	North America and South America	9
	Contacting Education Services	9
Chapter 1	Before You Begin	11
	Sufficient Disk Space	12
	Prerequisite Software	12
Chapter 2	Installation Instructions	13
	Introduction	14
	Preliminary Steps	14
	Loading the SAMPLIB Library	15
	Loading the Remaining Installation Files	16
	Setting Up IR Expert.	18
	Installing the VTAM APPLID	18
	Customizing ServiceCenter	19
	ServiceCenter Startup Parameters	19
	Customizing Startup Parameters	21
	Setting Up Named Users	22
	Updating the ServiceCenter Authorization Code.	22

	Setting Up TCP/IP	23
	Assigning a TCP Port	24
	Customizing the JCL.	32
Chapter 3	Running ServiceCenter	33
	Starting ServiceCenter	34
	Logging On to ServiceCenter	35
	Operator IDs for Logging On	35
	Logging Off of ServiceCenter	35
	Stopping ServiceCenter	36
	Shutdown from the GUI Client	36
	Internal Shutdown	36
	External Shutdown	37
	Shutdown Messages	37
Chapter 4	Login Security Interface	39
	Activating the Login Security Interface	40
	Verification of Users via Application Name	40
	Password Case Conversion	41
	Testing the Login Security Interface	41
	Deactivating the Login Security Interface	42
Chapter 5	System Considerations	43
	Avoiding Memory Problems	44
	ServiceCenter Dump Parameters	45
	Region Size Requirements	46
	Console Communication.	47
	Making ServiceCenter Non-Swappable	50
	Performance Groups in OS/390	51
	Caching	51
	More About Cache	52
	Reblocking the File System	53
	Using Alternate Screen Size Mode	53
	Server Resources	54
	Shared Memory	54
	Processes	54

	Semaphores	54
	OS/390 Initialization Parameters	54
Chapter 6	Additional Configuration	57
	SCAutomate Base	58
	Verifying Prerequisite Software	58
	Assigning a TCP Port	58
	Customizing Startup Parameters	59
	ServiceCenter SMF Recording.	60
Chapter 7	SCEmail	61
	SCEmail Setup in Text Mode	62
	Configuring sc.email	62
	Checking the Installation Components.	63
	Starting the Scheduler	67
	SCEmail Setup in GUI Mode	70
	Configuring sc.email	70
	Checking the Installation Components.	71
	Starting the Scheduler	74
Appendix A	ServiceCenter Messages	77
Appendix B	Installation Errors and Responses	89
	Index	91

Introducing the Client/Server Installation Guide for OS/390

Welcome to the *Client/Server Installation Guide for OS/390*. This guide provides instructions for installing the ServiceCenter OS/390 (MVS)-based client/server.

This preface provides a brief introduction to this guide, information about the knowledge requirements, and explains how to contact Peregrine Systems for customer support.

For instructions on installing the ServiceCenter client/server on a Windows platform, refer to the *Client/Server Installation Guide for Windows*.

For instructions on installing the ServiceCenter client/server on a Unix platform, refer to the *Client/Server Installation Guide for Unix*, and the *Java Client Installation and Configuration Guide*.

For instructions on installing SC3270 on an OS/390 (MVS)-based system, refer to the *SC3270 Client Installation Guide*.

The *Client/Server Installation Guide for OS/390* is organized as follows:

- *Introducing the Client/Server Installation Guide for OS/390* on page 7 — Provides a brief introduction to this guide, describes the knowledge requirements implied for users, and explains how to contact Peregrine Systems for customer support.
- *Before You Begin* on page 11 — outlines system requirements for installing ServiceCenter.
- *Installation Instructions* on page 13 — describes the steps required for a basic installation of ServiceCenter on OS/390.

- *Running ServiceCenter* on page 33 — explains how to verify your installation of ServiceCenter.
- *System Considerations* on page 43 — includes tips on how to avoid memory problems, and provides information about region size requirements and console communication.
- *Additional Configuration* on page 57 — describes the steps required to install and set up SCAutomate Base, SCemail, ServiceCenter SMF Recording, and the ServiceCenter Login Security Interface.
- *SCEmail* on page 61 — describes the steps for starting and using SCEmail, the ServiceCenter component that allows users or applications (or both) to send mail through email.
- *Login Security Interface* on page 39 — describes the ServiceCenter login security interface to RACF, CA-ACF2, and CA-Top Secret for password validation.
- *ServiceCenter Messages* on page 77 — lists messages that may display on the console during your installation of ServiceCenter.
- *Installation Errors and Responses* on page 89 — describes installation errors that may occur during your installation and provides responses to these errors.

Knowledge Requirements

The instructions in this guide assume a working knowledge of Peregrine Systems ServiceCenter and the platform you will be making the installation on. Additional reference information for ServiceCenter can be found in the *Installation and Technical Reference* guide.

For information on a particular platform, refer to that platform's supporting documentation.

- Basic usage information is contained in the *User's Guide*.
- Administration and configuration information is contained in the *System Administrator's Guide* and the *Application Administration Guide*
- Database configuration information is contained in the *Database Management and Administration Guide*.
- For copies of the manuals, download .PDF files of the documentation using the Adobe Acrobat Reader (also available on the web site). Additionally, you can order printed copies of the documentation through your Peregrine Systems sales representative.

Contacting Customer Support

For more information and assistance with this new release or with SC in general, contact Peregrine Systems' Customer Support.

Peregrine's CenterPoint Web site

Current details of local support offices are available through the following main contacts or at:

<http://support.peregrine.com/>

After logging in with your login and password, select **Whom Do I Call?** from **Contents** on the left side of the page to display the Peregrine Worldwide Contact Information.

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Contacting Education Services

Training services are available for the full spectrum of Peregrine Products including ServiceCenter.

Current details of our training services are available through the following main contacts or at:

<http://www.peregrine.com/education>

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1 Before You Begin

CHAPTER

This chapter gives instructions for installing ServiceCenter on OS/390.

Your system must meet the installation requirements before you will be able to install ServiceCenter. For a complete listing of client and server platform requirements, see the compatibility matrix on the Peregrine Systems, Inc. Customer Support web site at <http://support.peregrine.com/>. You must have a current login and password to access this web site.

Topics in this chapter include:

- *Sufficient Disk Space* on page 12
- *Prerequisite Software* on page 12

Sufficient Disk Space

The ServiceCenter server requires approximately 300 cylinders or 4500 tracks to unload the distribution files from the cartridge.

Note: See *Additional Configuration* on page 57 for a discussion of the resources used by the ServiceCenter server and client.

Prerequisite Software

The client/server uses the TCP/IP protocol stack for network communications. This software is required to install ServiceCenter as an OS/390 server.

OS/390 TCP/IP

The TCP/IP stacks currently supported are:

- IBM TCP/IP Version 3 Release 1 and higher.
- IBM Communications Server Version 2 Release 4 and higher.
- CA NetworkIT TCPaccess Version 5 Release 3, or Version 5 Release 2 with module LSCNCOM that supports SAS 6.5. This module is not currently shipped with NetworkIT TCPaccess and must be obtained from CA Technical Support.

2 Installation Instructions

CHAPTER

This chapter provides information for installing the ServiceCenter client/server on OS/390 (MVS).

Topics in this chapter include:

- *Introduction* on page 14
- *Preliminary Steps* on page 14
- *Loading the SAMPLIB Library* on page 15
- *Loading the Remaining Installation Files* on page 16
- *Setting Up IR Expert* on page 18
- *Installing the VTAM APPLID* on page 18
- *Customizing ServiceCenter* on page 19
- *Customizing ServiceCenter* on page 19
- *Setting Up TCP/IP* on page 23
- *Customizing the JCL* on page 32

Introduction

Peregrine Systems recommends that you complete the server installation before doing the client portion of your installation.

Installation instructions for the ServiceCenter clients on specific platforms are available in the following guides:

- *Client/Server Installation Guide for Windows* — instructions for installing the ServiceCenter client on Windows to communicate with servers running on Windows, OS/390, or Unix.
- *Java Client Setup and User's Guide* — instructions for installing the ServiceCenter Java clients on Windows, Unix, and OS/2 to communicate with servers running on Windows, OS/390, or Unix.
- *SC3270 Client Installation Guide* — instructions for installing the ServiceCenter 3270 client on an OS/390, to communicate with servers running on OS/390, Windows or Unix.

Important: In the following procedures, variables are shown in brackets < >. Assign the appropriate value to the variable based on your particular installation. Do not type the brackets < > as part of the command.

Preliminary Steps

To begin your installation of the ServiceCenter OS/390-based client/server, perform the following preliminary steps (in any sequence):

- Select a target disk on which to unload the data sets. You will need approximately 300 cylinders or 4500 tracks to unload the distribution files from the cartridge.
- Insert the ServiceCenter installation cartridge into the drive on the server computer.

Loading the SAMPLIB Library

The screen example below shows the text (highlighted in **bold**) you may need to change when you unload the first file from the ServiceCenter installation cartridge. The first file is a partitioned data set that contains README files and sample JCL members. The sample JCL includes the *SAMPLIB library*; the JCL necessary to load the remaining files on the cartridges.

To load the SAMPLIB library:

- 1 Change the **JobName**, **Accounting Information**, **Notification Userid** and **Message class** in the Job Card to suit your sites specification.

IEBCOPY on the second line many not need to be changed.

CART on the second line many not need to be changed.

Note: For **VERSION**, use the version number on the cartridge label (for example, V5R1M0). For **VOLSER**, use the volser number on the cartridge label.

```
//SCINST JOB (PNMS), 'IEBCOPY', NOTIFY=&SYSUID, MSGCLASS=X
//SMPLIB EXEC PGM=IEBCOPY
//SYSUT1 DD DISP=OLD, UNIT=CART, VOL=(, RETAIN, SER=VOLSER),
// LABEL=(1, EXPDT=98000),
// DSN=SAMPLIB
//SYSUT2 DD DSN=PREFIX.VERSION.SAMPLIB,
// DISP=(, CATLG, DELETE),
// SPACE=(TRK, (10, 10, 30)),
// * SPACE=(TRK, (10, 2)),
/ UNIT=SYSALLDA, VOL=SER=ALLOCATEDVOLUME
//SYSPRINT DD SYSOUT=*
//SYSIN DD DUMMY
```

- 2 Submit the job for processing.
- 3 Mount the cartridge. The SAMPLIB library is located on tape 1.
- 4 Verify that the cartridge is successfully loaded by reviewing the SYSOUT.

Make note of the following items that you have set on your system — you will need this information later in the installation process:

```
LOADLEV= _____ TUNIT= _____
DVOLSER= _____ HILEV= _____
DUNIT= _____ APPLEV= _____
```

These items are defined as follows:

- LOADLEV - rtelevel
- DVOLSER - VOLSER of the target disk
- DUNIT - Disk Unit type
- TUNIT - Tape Unit type
- HILEV - High Level Qualifier
- APPLEV - Application Level

Loading the Remaining Installation Files

The SAMPLIB partitioned data set created in the previous steps includes sample JCL that is used to unload the remaining installation files.

To unload the remaining files:

- 1 Edit the *HILEV.VERSION.SAMPLIB* member SCLOAD. This member contains notes that indicate the changes that must be made.
- 2 Change the Job card to meet your sites specifications. Change the items indicated by **BOLD** text in the screen example below to conform to your particular needs.

```
000001 //SCLOAD   JOB (ACCTINGINFO), 'SERVICECENTER',MSGCLASS=X,
000002 //           REGION=4096K
000003 //*****
000004 //*
000005 //* THIS IS THE JCL REQUIRED TO LOAD SERVICECENTER FILES OFF
000006 //* THE DISTRIBUTION TAPE.
000007 //*
000008 //*
000009 //* BEFORE RUNNING THIS JOB YOU MUST:
000010 //*   1) MODIFY THE JOB CARD TO MEET YOUR SITES SPECIFICATIONS
000011 //*   2) MODIFY THE PREFIX VARIABLE ON THE PROC STATEMENT
000012 //*      TO SPECIFY THE CORRECT HIGH LEVEL QUALIFIER
000013 //*   3) MODIFY THE DVOLSER VARIABLE ON THE PROC STATEMENT
000014 //*      TO SPECIFY THE VOLSER OF THE TARGET DISK
000015 //*   4) MODIFY THE DUNIT VARIABLE ON THE PROC STATEMENT
000016 //*      TO SPECIFY THE DISK UNIT TYPE
000017 //*   5) MODIFY THE TUNIT VARIABLE ON THE PROC STATEMENT
000018 //*      TO SPECIFY THE TAPE UNIT TYPE
000019 //*
000020 //*****
000021 //*
000022 //SCLOAD   PROC PREFIX=SC ,
000023 //           DVOLSER=XXXXXX,
000024 //           DUNIT=SYSALLDA,
```

```

000025 //          TUNIT=3480,
000026 //          LOADLEV=V5R1M0,
000027 //          APPLLEV=SC51
000028 // *
000029 //SCLOAD  EXEC PGM=IEBCOPY
000030 //SYSPRINT DD  SYSOUT=*
000031 //SYSUT1   DD  DSN=LOAD,
000032 //          LABEL=(2,EXPDT=98000),DISP=OLD,
000033 //          DCB=(,RECFM=U,BLKSIZE=6160),
000034 //          VOL=(,RETAIN,SER=SC51),UNIT=&TUNIT
000035 //SYSUT2   DD  DSN=&PREFIX..&LOADLEV..LOAD,
000036 //          SPACE=(CYL,(16,30,30),RLSE),
000037 //          DCB=*.SYSUT1,
000038 //          DISP=(,CATLG,DELETE),UNIT=&DUNIT,VOL=SER=&DVOLSER
000039 //SYSIN    DD  DUMMY
000040 //PEND
000041 //RUNSTEP  EXEC  SCLOAD
***** ***** Bottom of Data *****

```

- 3 Submit the JCL for processing.
- 4 Mount the cartridge.
- 5 Follow the prompts.
- 6 Change cartridges when prompted.
- 7 Verify that the cartridge was successfully loaded by reviewing the SYSOUT.
- 8 When the job is complete, verify that all job steps issue a return code of 0000.

Note: If you cannot resolve errors associated with one or more job steps, contact Peregrine Systems Customer Support for assistance. Be prepared to provide information about any error messages you received and any steps taken towards resolution.

Warning: Use the unloaded JCL to install the files. If you select another method, you must unload the ServiceCenter database files (high level qualifier.SCDB.type) with the attributes shown below — failure to do so results in execution *errors*.

The LRECL and BLKSIZE are as follows:
for .SCDB.FRE specify RECFM=FB, LRECL=512, BLKSIZE=512
for .SCDB.ASC specify RECFM=F, LRECL=3860, BLKSIZE=3860
for .SCDB.LFD specify RECFM=F, LRECL=3860, BLKSIZE=3860
for .SCDB.DB n specify RECFM=F, LRECL=3860, BLKSIZE=3860
where n is the file number.

Warning: Putting these ServiceCenter data sets under management of storage products such as BMC's RESOLVE® StopX37/II can have adverse effects or can damage the data stored on these files. StopX37/II attempts to reallocate a ServiceCenter data set that caused the B37. This reallocation can damage the data set to a point where it is unusable by ServiceCenter. If you have questions, contact Peregrine Systems Customer Support for details.

Setting Up IR Expert

If you are upgrading to a different release (for example ServiceCenter 4.0 and ServiceCenter 5.0), do an IR regen on the new server.

Note: This step is not necessary if you installed different versions of the same release (for example 4.0 and 4.3), or if you installed the client only.

Installing the VTAM APPLID

To access ServiceCenter from a 3270 terminal, a VTAM APPLID must be installed. If you do not plan to use SC3270, skip this section.

To install the default APPLID (SC):

- 1 Copy the *HILEV.VERSION.SAMPLIB* member VTAMLST to your SYS1.VTAMLST (or the corresponding data set).
- 2 Activate the application by issuing the following console command:
V NET,ACT,ID=<member name> (where *member name* is the added member in SYS1.VTAMLST).

The following messages indicate that the application has been successfully activated:

- *IST097I VARY ACCEPTED*
- *IST903I <member name> ACTIVE* (where *member name* is the added member in the SYS1.VTAMLST).

Customizing ServiceCenter

A complete list of startup parameters that control various features of the ServiceCenter client and server is available in the *Technical Reference*.

For further customization, see the *System Tailoring Guide*

For further administration and setup, see the appropriate guide.

- *System Administrator's Guide*
- *Application Administration Guide*
- *Database Management and Administration Guide*

ServiceCenter Startup Parameters

The PARMS member in the *HILEV.VERSION.SAMPLIB* partitioned data set contains the authorization key and sample startup parms.

Sample PARMS File

```
000001 # ** NOTE ** all parms are case sensitive
000002 #
000003 # You must have an auth code to run ServiceCenter. If you do
not have
000004 # an auth code, please call your Peregrine Sales contact to
get one.
000005 auth:xxxxxxxxxxxxxxxxxxxxxxx
000006 #
000007 # The amount of shared memory required to run ServiceCenter
depends
000008 # on how many users will be logged on and how much IR Expert
data
000009 # you have. 8000000 (8 MB) should be enough for a trial
system with
000010 # 10-20 users logged in.
000011 shared_memory:8000000
000012 #
000013 applid:APPLID
000014 #
000015 path:PREFIX.applevel
000016 #
```

```

000017 #=====
000018 # IR Expert parms
000019 #=====
000020 #
000021 # ir_prefix specifies the dataset prefix for the IR Expert
000022 # dc and map files.
000023 ir_prefix:PREFIX.applelevel
000024 #
000025 # ir_languagefiles_path specifies the prefix of the IR Expert
000026 # language files.
000027 ir_languagefiles_path:PREFIX.rtelevel
000028 #
000029 # ir_volser specifies the target volser to hold the IR Expert
000030 # dc and map files.
000031 #ir_volser:VVVVVV
000032 #
000033 # ir_language specifies the language of the data which
000034 # IR Expert will be processing. english and german are
000035 # supported.
000035 ir_language:english
000036 #
000037 #=====
000038 # Language Support NLS
000039 #=====
000040 #language:American
000041 #
000042 #=====
000043 # MVS TCP/IP parms
000044 #=====
000045 #
000046 # mvstcp specifies the TCP/IP port name to be used for MVS
000047 # server.
000047 #mvstcp:t3271
000048 #mvstcpexpress:t3272
000049 #
000050 # mvstcp_prefix specifies the dataset prefix of the TCP/IP
000051 # system
000051 # datasets. TCPIP is the default value for this parameter.
000052 #mvstcp_prefix:TCPIP
000053#
000054 # mvstcp_addrspc specifies the name of the TCP/IP address
000055 # space.
000055 # TCPIP is the default value for this parameter.
000056 #mvstcp_addrspc:TCPIP
000057 #
000058 triggers:1
000059 #
000060 parentvars:1

```

Customizing Startup Parameters

Edit the PARMS member in SAMPLIB as follows:

applid:<APPLID>

If you created a VTAM APPLID, remove the # from the beginning of the parameter and change APPLID to the VTAM APPLID created earlier.

auth:<authorization code>

Specify the ServiceCenter Authorization code.

path:PREFIX. <application release>

Change PREFIX to the data set prefix you specified when you unloaded the cartridges. The correct <application release> (SC5, for example) is already in place and should not be changed.

ir_language:<language name>

Specify the language of the data which IR expert will be processing. The default is English.

ir_prefix:PREFIX. <application release>

Change PREFIX to the data set prefix you specified when you unloaded the cartridges. The correct <application release> (SC5, for example) is already in place and should not be changed.

ir_languagefiles_path: PREFIX. <executable release>

Change PREFIX to the data set prefix you specified when you unloaded the cartridges. The correct <executable release> (V5R0M0, for example) is already in place and should not be changed.

ir_volser:<VVVVVV>

If desired, remove the # from the beginning of the parameter and change <VVVVVV> to the VOLSER of the disk where you want the IR Expert index files to be stored.

shared_memory parameter:

Specify the shared_memory. Leave the default if it doesn't have to be changed.

Note: Refer to the Internationalization Parameters table in *Technical Reference* for language parameters and a list of supported languages.

Setting Up Named Users

If you are running your ServiceCenter system with a *Named Users License*, when you switch from a temporary to a permanent license, you will need to select named users.

Note: Do this only if you are running ServiceCenter with a Named Users License. If you are running ServiceCenter with a Floating User License, setting up named users is not required.

Named users can be selected in two ways:

- Add a flag to each user's operator record, as described in the *Named Users* section of the *System Administrator's Guide*.
- Add the `namedusersfile` parameter as described below. For more complete instructions on creating a named user's file, see the *Named Users* section of the *System Administrator's Guide*.

To set up named users using the `namedusersfile` parameter:

- 1 Add the `namedusersfile` parameter to the PARMS member in the SAMPLIB in this format:

```
namedusersfile:dsn<filename>
```

where `<filename>` identifies the text file listing the ServiceCenter operators. If this file is not in the ServiceCenter RUN directory, include the fully qualified path with the file name.

- 2 Create a named user file.
- 3 List the ServiceCenter named users in the `<filename>` file.

Updating the ServiceCenter Authorization Code

You must have an authorization code to run ServiceCenter. You initially enter the authorization code during the installation procedure. If you are running a trial, the authorization code is *temporary*. When you purchase the product, you will receive a *permanent* authorization code. If you do not have an authorization code, contact your Peregrine Systems, Inc. Account Executive.

Edit the PARMs member in HILEV.VERSION.SAMPLIB as follows:

- ▶ At the auth: parameter of the PARMs member in the SAMPLIB, enter the new authorization code supplied by your Peregrine Systems, Inc. Account Executive.

Setting Up TCP/IP

Edit the PARMs member in the SAMPLIB as follows:

mvstcp:<t3271>

Remove the # from the beginning of the statement and change <t3271> to the TCP port name you previously assigned.

Note: This parameter is case sensitive.

mvstcpexpress:<t3272>

Remove the # from the beginning of this statement and change <t3272> to the TCP port name you previously assigned. This port is used for the ServiceCenter Express server.

mvstcp_prefix:<TCPIP>

Remove the # from the beginning of this statement and change <TCPIP> to the data set prefix used for your TCP/IP data sets. If you omit this parameter, the system uses TCPIP as the default high-level qualifier. For example, if the data set name for the etc.services file is SYS1.TCPIP.ETC.SERVICES, then the following parameter is required: mvstcp_prefix:SYS1.TCPIP

mvstcp_addrspc:<TCPIP>

Remove the # from the beginning of the statement and change <TCPIP> to the name of the TCP/IP address space. The default name is TCPIP.

The following describe how to determine the address space names:

- **IBM TCP/IP** — the name is the job name for the TCP/IP started task/job. See the TCPIPUSERID parameter in the TCPIP.TCPIP.DATA data set for the job name. For example, if the TCPIPUSERID is MVSPROD, change the mvstcp_addrspc parameter to: mvstcp_addrspc:MVSPROD.
- **CA NetworkIT TCPAccess** — the name is the subsystem ID of the TCPIP address space. The ID is assigned during the installation of NetworkIT TCPAccess. For example, if the subsystem ID is ACSS, change the mvstcp_addrspc parameter to: mvstcp_addrspc:ACSS.

Assigning a TCP Port

Assign a TCP port according to the instructions that apply to your particular system. This port will be used to support OS/390 file I/O (QSAM, JES, VSAM and VTAM) operations. Specify this port with the `mvstcp` parameter. For more information on this parameter, see *Setting Up TCP/IP* on page 23.

NetworkIT TCPAccess

Assign a TCP/IP port using the `mvstcp` parameter in the PARMS data set. You can find information about assigning a TCP port in the *SNS/NFS Installation and Administration Guide*.

If you are using NetworkIT TCPAccess, you must place the NetworkIT TCPAccess link library first in the STEPLIB concatenation. The TCPAccess link library must contain module LSCNCOM.

IBM TCP/IP

In the OS/390 TCP/IP `etc.services` data set, assign a port number to the OS/390 server. You can find information about assigning a TCP port in the IBM TCP/IP Version 3 Release 1 for MVS: Planning and Customization Manual.

Open Edition requirements for TCP/IP

If you are using the IP component of OS/390 2.5 and above (IBM TCP/IP 3.4), verify that the ServiceCenter job has RACF authority to read/write the HFS (hierarchical file system) under the Open Edition OS/390 segment.

Do this in RACF by adding an OE (OMVS) class for the job as follows:

- 1 From the RACF Services Option Menu, type 4 at the OPTION prompt; press Enter.

```

RACF - SERVICES OPTION MENU

SELECT ONE OF THE FOLLOWING:

    1  DATA SET PROFILES
    2  GENERAL RESOURCE PROFILES
    3  GROUP PROFILES AND USER-TO-GROUP CONNECTIONS
    4  USER PROFILES AND YOUR OWN PASSWORD
    5  SYSTEM OPTIONS
    6  REMOTE SHARING FACILITY
    7  DIGITAL CERTIFICATES
    99 EXIT

                                Licensed Materials - Property of IBM
                                5647-A01 (C) Copyright IBM Corp. 1983, 1998
                                All Rights Reserved - U.S. Government Users

OPTION ==> 4

```

- 2 At the User Profile Services screen, type the name of the ServiceCenter started task (for example, SCSTC2). At the OPTION prompt, type 1 to add a profile, then press Enter.

```

                                RACF - USER PROFILE SERVICES

SELECT ONE OF THE FOLLOWING:

    1  ADD           Add a user profile
    2  CHANGE        Change a user profile
    3  DELETE        Delete a user profile
    4  PASSWORD      Change your own password or interval
    5  AUDIT         Monitor user activity (Auditors only)

    D or 8  DISPLAY  Display profile contents
    S or 9  SEARCH   Search the RACF data base for profiles

ENTER THE FOLLOWING INFORMATION:
USER      ==> SCSTC2      Userid

OPTION ==> 1

```

- 3 Using your sites standards, type the **Owner**, **User Name**, and **Default Group** for the ServiceCenter started task, then press **Enter**.

```

                                RACF - ADD USER SCSTC2

ENTER THE FOLLOWING INFORMATION:

OWNER                ===> IBMUSER   Userid or group name
USER NAME            ===> ServiceCenter
DEFAULT GROUP        ===> SYS1     Group name
PASSWORD             ===>                User's initial password
                   ===>                Re-enter password to verify
PASSWORD INTERVAL    ===>                1 - 254 (days), NO, or blank

                                Press ENTER to continue.

COMMAND ===>

```

- 4 Type **YES** at the **To Add Optional Information** field and press Enter to display the Open Edition options.

```

                                RACF - ADD USER SCSTC2

TO ASSIGN USER ATTRIBUTES, ENTER YES:

GROUP ACCESS        ===> NO           SPECIAL            ===> NO
ADSP                ===> NO           OPERATIONS         ===> NO
OIDCARD             ===> NO           AUDITOR           ===> NO
NO-PASSWORD         ===> NO

IDENTIFY THE MODEL PROFILE FOR USER DATA SETS (OPTIONAL):

MODEL PROFILE       ===>

TO CREATE THE FOLLOWING, ENTER YES (OPTIONAL):

A GENERIC DATA SET PROFILE        ===> NO
A MINIDISK PROFILE                  ===> NO

TO ADD OPTIONAL INFORMATION, ENTER YES    ===> YES

COMMAND ===>

```

5 Select OMVS Parameters and press Enter.

```

RACF - ADD USER SCSTC2

To ADD the following information, enter any character:

  _ CLASS AUTHORITY
  _ INSTALLATION DATA
  _ GROUP AUTHORITY
  _ SECURITY LEVEL or CATEGORIES
  _ SECURITY LABEL
  _ LOGON RESTRICTIONS
  _ NATIONAL LANGUAGES

  _ DFP PARAMETERS
  _ TSO PARAMETERS
  _ OPERPARM PARAMETERS
  _ CICS PARAMETERS
  _ WORK ATTRIBUTES
  S OMVS PARAMETERS
  _ NETVIEW PARAMETERS
  _ DCE PARAMETERS
  _ OVM PARAMETERS

COMMAND ==>>>

```

6 Type a unique User Identifier (for example, 122), then press Enter.

```

RACF - ADD USER SCSTC2                               1 of 3
OMVS PARAMETERS

Enter User Identifier (UID) below, then press ENTER:

USER IDENTIFIER   ==>>>  122           0 - 2147483647

COMMAND ==>>>

```

7 Type an **Initial Directory Path Name** (for example, /) and press **Enter**.

```
RACF - ADD USER SCSTC2      2 of 3
OMVS PARAMETERS

Enter Initial Directory Path Name (HOME), then press ENTER:

=> /                          <=
=>                             <=
=>                             <=
=>                             <=
=>                             <=

      Press ENTER to continue

COMMAND ==>
```

8 Type a **Program Path Name** (usually /bin/sh) and press **Enter**.

```
RACF - ADD USER SCSTC2      3 of 3
OMVS PARAMETERS

Enter Program Path Name (PROGRAM), then press ENTER:

=> /bin/sh                     <=
=>                             <=
=>                             <=
=>                             <=
=>                             <=
=>                             <=

COMMAND ==>
```

This adds the RACF profile for the ServiceCenter started task.

```

                                     RACF - USER PROFILE SERVICES
Profile added

SELECT ONE OF THE FOLLOWING:

      1  ADD          Add a user profile
      2  CHANGE       Change a user profile
      3  DELETE       Delete a user profile
      4  PASSWORD     Change your own password or interval
      5  AUDIT        Monitor user activity (Auditors only)

      D or 8  DISPLAY  Display profile contents
      S or 9  SEARCH   Search the RACF data base for profiles

ENTER THE FOLLOWING INFORMATION:

      USER      ==> SCSTC2      Userid

      OPTION ==>

```

Next, verify that file `\dev\null` exists and can be read by ServiceCenter.

To verify that file `\dev\null` exists and can be read:

- 1 Use the TSO OMVS command to enter the Unix Services.

```

----- ISPF/PDF PRIMARY OPTIONS MENU -----
OPTION ==> tso omvs

      0  ISPF PARMS - Specify terminal and user parameters  USERID - SWH1
      1  BROWSE     - Display source data or output listings  TIME    - 15:06
      2  EDIT       - Create or change source data           TERMINAL - 3278
      3  UTILITIES  - Perform utility functions              PF KEYS - 24
      4  FOREGROUND - Invoke language processors in foreground
      5  BATCH      - Submit job for language processing
      6  COMMAND    - Enter TSO command, CLIST, or REXX exec
      IP  IPCS      - IPCS
      S  SDSF       - System Display Search Facility
      X  EXIT       - Terminate ISPF using log and list defaults

```

- 2 Change to the **dev** directory (**cd \dev**) and verify that the **null** file exists (**ls -al null**) and that it is readable.

```
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```
- - - - -
- Improve performance by preventing the propagation -
- of TSO/E or ISPF STEPLIBs -
- - - - -
```

```
$ cd \dev
```

```
$ ls -al null
```

```
-rwxrwxrwx 1 TCPIP 1      475 Feb 16 13:44 null
```

```
$
```

```
==>
```

```
ESC=⌘      1=Help      2=SubCmd      3=HlpRetrn   4=Top        5=Bottom      6=TSO
              7=BackScr    8=Scroll      9=NextSess  10=Refresh   11=FwdRetr   12=Retrieve
```

```
RUNNING
```

3 If the null file does not exist, create it by using the touch command.

```

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cd /dev
- - - - -
- Improve performance by preventing the propagation -
- of TSO/E or ISPF STEPLIBs -
- - - - -
$ $

====> touch null
INPUT
ESC=¢  1=Help      2=SubCmd    3=HlpRetrn  4=Top        5=Bottom    6=TSO
        7=BackScr   8=Scroll   9=NextSess 10=Refresh  11=FwdRetr  12=Retrieve

```

- 4 Finally, ensure that the Open Edition parameter MAXFILEPROC is set to a minimum of 256. Use ISPF edit to set the parameter in member BPXPRMnn of SYS1.PARMLIB.

```

011100
/*****/
011200 /* */
011300 /* Specify the maximum number of files that a single user */
011400 /* is allowed to have concurrently active or allocated. */
011500 /* */
011600 /* Notes: */
011700 /* */
011800 /* 1. This parameter is the same as the Open_Max variable */
011900 /* defined in POSIX 1003.1. */
012000 /* 2. Minimum recommended value for OpenEdition MVS is 3. */
012100 /* 3. Maximum recommended value for OpenEdition MVS is 65535. */
012200 /* 4. If this parameter is not provided, the system default */
012300 /* value for this parameter is 64. */
012400 /* 5. This value must be used in determining the number of */
012500 /* character special files, /dev/fdNN. See the BPXISMKD */
012600 /* member in SYS1.SAMPLIB for further details. */
012700 /* */
012800 /*****/
012900 MAXFILEPROC(256) /* Allow at most 256 open files */
013000 /* per user */
013100

```

Customizing the JCL

Edit the SC member in *HILEV.VERSION.SAMPLIB* as follows:

- Change the PROC PREFIX to the data set prefix you specified when you unloaded the cartridges.

Sample SC Member:

```

000001 //SC      JOB
      (ACCTINGINFO), 'SERVICECENTER', MSGCLASS=X, CLASS=W,
000002 //      REGION=130M, TIME=1440
000003
//*****
...
000030 //SC      PROC PREFIX='SC',
000031 //      PARMMEM=PARMS,
000032 //      LOADLEV=rtelevel,
...
000048 //RUNSTEP EXEC SC

```

3 Running ServiceCenter

CHAPTER

This chapter describes the procedures to start and stop ServiceCenter in order to verify your installation of ServiceCenter on an OS/390 (MVS)-based client/server.

Topics in this chapter include:

- *Starting ServiceCenter* on page 34
- *Logging On to ServiceCenter* on page 35
- *Logging Off of ServiceCenter* on page 35
- *Stopping ServiceCenter* on page 36

Starting ServiceCenter

To start ServiceCenter:

- 1 Edit the SC member in the *HILEV.VERSION.SAMPLIB* partitioned data set created during installation. This member contains sample JCL that starts ServiceCenter as a batch job and also contains notes indicating the necessary changes.
- 2 *For started tasks only:*
 - a Copy the SC member to your started task PROCLIB.
 - b Delete the JOBCARD, and delete the PEND and EXEC SC statements, the last two statements in the member. If possible, use the preset parameters for REGION and TIME.

Note: For more information about these DD statements, see *ServiceCenter Dump Parameters* on page 45.

- 3 Submit the batch job (or initiate the started task). Within one minute, ServiceCenter issues the following console message:

```
SC001 SERVICECENTER LOGONS ENABLED -- APPLID
```

If ServiceCenter does not issue this console message, refer to *ServiceCenter Messages* on page 77.

When you submit the job for execution, the following message should appear in the job log.

```
SC060 TCP LISTENER IS ON HOST: HOSTNAME PORT # nnnn
```

where *HOSTNAME* is your OS/390 host name and *nnnn* is the port number associated with the *mvstcp* parameter.

If ServiceCenter does not issue this message, refer to *ServiceCenter Messages* on page 77.

Note: If you are unable to resolve startup errors, contact Peregrine Systems Customer Support for assistance. Be prepared to provide information about any *abend* messages and steps taken towards resolution.

Logging On to ServiceCenter

To log onto the ServiceCenter text client:

- ▶ When the ServiceCenter server is running, log on by entering one of the following commands at the VTAM prompt:
 - `logon applid= <sc>` (where *sc* is the APPLID).
 - `logon applid(<sc>)` (where *sc* is the APPLID).

Note: Use the first form if USSCMD was assembled with option `FORMAT=PL`; use the second if USSCMD was assembled with `FORMAT=BAL`. If you do not know which to use, try both. You can also make an entry in the USS table to enable access to ServiceCenter by entering `SC` or another appropriate APPLID. You will have to restart VTAM to activate this definition. See the appropriate VTAM manual for details.

Note: For instructions on how to log on with a GUI client, see the *SC3270 Client Installation Guide*.

Operator IDs for Logging On

Peregrine Systems delivers an initial ServiceCenter Operator ID of `FALCON` with the system. `FALCON` allows you, as a system administrator, to access ServiceCenter to perform preliminary verification and maintenance.

For more information on ServiceCenter Operator IDs, see the *Application Administration* guide, and the *System Administrator's Guide*.

Logging Off of ServiceCenter

Use one of the following methods to log off of ServiceCenter:

- Press the F3 (logoff) option key on the Main Menu. At the prompt, press F3 or select `Exit ServiceCenter`.
- Type `logoff` on any menu command line and press Enter. At the prompt, select `Exit ServiceCenter`.

Stopping ServiceCenter

There are several ways to stop ServiceCenter:

- *Shutdown from the GUI Client*, next section.
- *Internal Shutdown* on page 36
- *External Shutdown* on page 37

Note: Internal shutdown is the recommended method of shutting down ServiceCenter.

Shutdown from the GUI Client

To shut down from the ServiceCenter GUI Client:

- 1 From the System Administrator's Home Menu, select the Utilities tab.
- 2 Click Maintenance.
- 3 Click Shutdown.

The active process list displays the processes that will be shut down.

- 4 Select one of the following options:
 - Click Shutdown Now to force an immediate shutdown.
 - Click Advise and Shutdown to enter a the number of seconds until shutdown. The Status Bar will then display the number of seconds entered and the number of seconds until shutdown, and advise users to shutdown and log off.
 - Click Cancel Shutdown to exit this menu without shutting down.
 - Click Status to open the System Status window and examine or kill processes from there.

Internal Shutdown

To shut down ServiceCenter internally use one of the following methods:

- Type shutdown on the ServiceCenter command line.
- Select the **shutdown** option from the System Admin II Menu.

Note: Selecting the **shutdown** option from the System Admin II Menu can be done only by a user logged on to ServiceCenter who has system administrator capabilities, such as FALCON.

External Shutdown

Although an internal shutdown is the recommended method of shutting down ServiceCenter, the following *external* methods are also available.

- The OS/390 Modify command: F *jobname*, SHUTDOWN.
- The OS/390 P (stop) command.

Note: Both external shutdown methods permit the system to complete active I/O transactions, which preserves the integrity of the file system.

Warning: Do not use the OS/390 C (cancel) command to stop ServiceCenter. Canceling ServiceCenter prevents it from completing active I/O Shutdown messages.

Shutdown Messages

The following messages appear in the job log during ServiceCenter shutdown (internal or external):

```
SC004 SERVICE CENTER LOGONS DISABLED -- applid
SC062 SHUTDOWN OF TCP LISTENER COMPLETE
SC070 SHUTDOWN MAY TAKE OVER 1MINUTE
SC002 USER (userid) SYSTEM SHUTDOWN COMPLETE
```

Note: Message SC062 appears only if the corresponding server was initialized.

The system normally shuts down thirty seconds after message SC070 appears. If for some reason users are still active after thirty seconds, the following message is displayed:

```
SC072 SHUTDOWN WAITING FOR n TASK(S) TO TERMINATE
```

The shutdown waits another thirty seconds, again checks for active users, and again issues message SC072. This continues for a set number of iterations or until no active users are found. Set the number of wait iterations using the startup parameter `shutdownattempts`. The default is 10, which takes approximately 5 minutes.

Note: The `shutdownattempts` and `detach` parameters can be set in the PARMs member of SAMPLIB dataset.

If after the given number of iterations, active tasks are still found, the active tasks are terminated based on the setting of the `detach` parameter.

- If `detach` is set to 0, the active tasks are not terminated, and ServiceCenter continues to check for active tasks every thirty seconds until ServiceCenter terminates.

- If `detach` is set to 1, each active task is terminated immediately. The following message appears in the job log for each active task:

```
SC074 SHUTDOWN DETACHING PID nn, USER ccccccc
```

- If `detach` is set to 2, you are prompted to terminate each remaining active task. The following message appears on the console:

```
SC072 TERMINATE PID nn, USER ccccccc, REPLY 'Y' or 'N' TO TERMINATE
```

Reply Y to terminate the task; reply N to leave the task active. For each N response, ServiceCenter waits another thirty seconds, and then prompts you with the SC072 message for any remaining active tasks.

In the unlikely event that ServiceCenter fails to terminate, issue the `STATUS` command (`F jobname,STATUS`). A list of active users appears in the job log. Try to determine what each user is doing. If none of the users are actively updating the database, terminate each user session by issuing the `KILL -9` command (`F jobname,KILL -9 pid`) for each PID listed in the `STATUS` list.

Warning: Any action that prematurely terminates an active ServiceCenter task prevents it from completing active I/O transactions, which can cause file system corruption. These actions include using `detach:1` and using the `KILL -9` command.

4 Login Security Interface

CHAPTER

ServiceCenter includes a built-in login security interface to RACF, CA-ACF2, or CA-Top Secret. This interface allows ServiceCenter to perform password validation using your existing security framework.

This chapter was designed to aid ServiceCenter Implementers setup ServiceCenter Login Security Interface on their systems.

Topics in this chapter include:

- *Activating the Login Security Interface* on page 40
- *Testing the Login Security Interface* on page 41
- *Deactivating the Login Security Interface* on page 42

Activating the Login Security Interface

Activation of the interface is optional. If you choose not to use the Login Security Interface, ServiceCenter performs login validation using passwords in the ServiceCenter operator database.

To activate the login security interface

- 1 Ensure that the ServiceCenter load library is APF authorized.
- 2 Add the `mvssrv:host.service` parameter to the `sc.ini` file on the ServiceCenter server platform, where `host` is the hostname of OS/390 and `service` is the service name or port number established during the ServiceCenter installation.
- 3 Set the password of the operator records which are to be validated using RACF, CA-ACF2, or CA-Top Secret to SAF.
- 4 As a precautionary measure, login to two concurrent ServiceCenter sessions. One session allows you to modify the login and test the interface. If the modifications fail, you can use the second session to restore login capability.
- 5 If your security application is CA-ACF2, ensure that the PROF rules allow ServiceCenter to communicate with SAF.

The parameter list for SAF is:

```
RACROUTE=MACRO  USERID=          ACE=
REQUEST=        VERIFYPASSWORD=
```

Verification of Users via Application Name

The SAF interface checks a user's user ID and password to verify that the user is allowed to access ServiceCenter. Optionally, the SAF interface can pass an application name to perform this check. The default, however, is to not pass an application name.

The application name is specified in the ServiceCenter job JCL parameters as `R=name`. The name must be ≤ 8 characters. For example:

```
RUNPARMS='P=SYEXER C=1000000 R=SCENTER'
```

In this example, `SCENTER` is passed to SAF as the application name when ServiceCenter is verifying the user's login ID and password. If the user ID is not allowed to use the application `SCENTER`, the login is rejected.

Note: For information on how to define an application name and user ID, see the documentation for the Security Package used by your system.

Password Case Conversion

If your external security application expects upper-case passwords, you can automatically translate user-entered passwords to uppercase by:

In Text Mode, do one of the following:

- Use Forms Designer to edit the format `login.prompt`
- Change the `ctrl` setting for the input field password to 264 (hidden and uppercase conversion).

In GUI Mode, do one of the following:

- Use Forms Designer to edit the format `login.prompt.g`
- Change the `CaseConversion` property to `Upper`.

Testing the Login Security Interface

Even though the login security interface is active, it checks only those operators whose `ServiceCenter` password is `SAF`.

To test the interface:

- 1 Create an operator record in the `ServiceCenter` operator file for a user who is defined to the security interface.
- 2 Set the password in the operator record to `SAF`.
- 3 Log in from another terminal with the operator ID and password (`SAF`) you have just established.
- 4 When you are satisfied that the interface is working properly, change the remaining operators' passwords to `SAF`.

Note: If the connection to `ServiceCenter` is not successful, the message “Connection to `ServiceCenter` failed, cannot verify userid and password” will be displayed when you try to log on.

Deactivating the Login Security Interface

If you experience difficulty logging in after activating the security interface:

- 1 Switch to your second ServiceCenter session.
- 2 Change the password in the operator record to its original value or some value other than SAF.
- 3 If you forced the input field password to uppercase, then:

In Text Mode:

- Reset the **Ctrl** setting from 264 back to 8.

In GUI Mode:

- Reset the **CaseConversion** from **Upper** to **None**.

5 System Considerations

CHAPTER

This chapter includes tips on how to avoid memory problems, and provides information about region size requirements and console communication, among other things.

Topics in this chapter include:

- *Avoiding Memory Problems* on page 44
- *ServiceCenter Dump Parameters* on page 45
- *Region Size Requirements* on page 46
- *Console Communication* on page 47
- *Making ServiceCenter Non-Swappable* on page 50
- *Performance Groups in OS/390* on page 51
- *Caching* on page 51
- *Reblocking the File System* on page 53
- *Using Alternate Screen Size Mode* on page 53
- *Server Resources* on page 54
- *OS/390 Initialization Parameters* on page 54

Avoiding Memory Problems

ServiceCenter manages all small storage requests by first allocating a 4K page and then breaking this storage into smaller units. Choosing a larger page size has been shown to significantly reduce the CPU time as overall storage increases. As the page size increases the overall memory usage of ServiceCenter will also increase to some extent. A page size of 16384 has proven to yield the best CPU/Memory size combination. For sites with a small user base, less than 75 users, the default value of 4096 will yield the best performance in most cases.

The initialization parameter **M** can be used to control the size of the pages. For an example of how to set this value, see *OS/390 Initialization Parameters* on page 54.

Since each new user or task requires memory, and memory is a fixed resource (controlled by the **REGION** parameter in the ServiceCenter JCL), it is possible to exhaust the memory allotted to the SC member of the SAMPLIB dataset, resulting in system abends (for example, 80A, 878, or 0F9) and job termination.

To avoid this possibility, you can specify two startup parameters in the PARMs member of SAMPLIB dataset to ensure that enough memory is available for existing tasks to execute successfully. These parameters are:

```
btl_free:nnnn  
atl_free:nnnn
```

where **nnnn** represents the number of kilobytes of memory, below the line (**btl_free**) and above the line (**atl_free**), that must be available before a new task will run. By default, no memory checking is performed. The memory check is performed only once during task initialization, so overhead is negligible.

Using the following values will reserve 40 KB of below the line memory and 64 KB of above the line memory:

```
btl_free:40  
atl_free:64
```

If the specified amounts of memory are not available, the new task is terminated and one of the following messages will appear in the ServiceCenter log:

Low on above the line storage, session terminated.

— or —

Low on below the line storage, session terminated.

and in the job log:

SC082 LOW ON ABOVE THE LINE STORAGE, SESSION TERMINATED.

— or —

SC083 LOW ON BELOW THE LINE STORAGE, SESSION TERMINATED.

If these messages appear, you can increase the **REGION** parameter in the SC member of the SAMPLIB dataset to provide more memory for ServiceCenter. If you receive the below the line message and your **REGION** parameter is greater than 12 MB, then increasing the **REGION** further will have no effect.

ServiceCenter Dump Parameters

To obtain useful information from ServiceCenter abend output, include DD statements for the following files in the SC member of the SAMPLIB dataset:

- SYSPRINT
- SYSTEMR
- SYSUDUMP
- SNAP

Note: Route the above DD statements to a SYSOUT class that can be printed or loaded on tape.

ServiceCenter abend processing must use the standard OS/390 facilities to provide the information necessary for analysis. In its default configuration, ABEND-AID takes control of all abends. If ABEND-AID is used on your OS/390 system, exclude ServiceCenter from its control.

Generally, the SYSOUT class used for SYSPRINT, SYSTEM, SYSUDUMP, and SNAP can be the same class. This concatenates them into one data set to be printed or loaded on tape, and shipped for analysis.

Route the JESLOG and SYSMMSGs from ServiceCenter to the same SYSOUT class used for SYSPRINT, SYSTEM, SYSUDUMP, and SNAP. This is not always possible because of the method by which installations define started tasks to JES.

Region Size Requirements

The region size must be large enough for program storage, I/O cache (default 500,000 bytes), shared memory (default 8,000,000 bytes), and user storage. User storage ranges from 500 KB for an inactive user to approximately 1 MB for an active user or background task. The specific Private Storage requirements for both above and below the line storage can be found in the chart below.

Table 5-1: Storage Requirements

Item	Above the Line	Below the Line
Base system	1 MB	512 KB
I/O cache	user specified	0 KB
Shared memory	user specified	0 KB
3270 user	1 MB - ~1.5 MB*	4 KB
Background task	1 MB - ~1.5 MB	4 KB
Express user	2 MB*	4 KB
Client user	2 MB*	4 KB

* If you have your data mapped to DB2, allow 4 MB above the line per user.

Example:

A 40-user system with five background processes, an I/O cache of 1 MB, and shared memory of 8 MB would require a Region Size of 97.5 MB, calculated as follows:

Users	Background	Base	Cache	Memory	Region Size
(40*4 MB) +	(5*1.5 MB) +	1 MB +	1 MB +	8 MB =	177.5 MB above the line
(40*4 KB) +	(5*4 KB) +	512 KB =			692 KB below the line

Example #2:

A five-user system with five client users, two background processes, an I/O cache of 500 KB, and shared memory of 8 MB would require a Region Size of 30 MB, calculated as follows:

Users	Client	Bkground	Base	Cache	Memory	Region Size
(5 * 2 MB) +	(5 * 1.5 MB) +	(2 * 1.5 MB) +	1 MB +	500 KB +	8 MB =	30 MB above the line
(5 * 4 KB) +	(5 * 4 KB) +	(2 * 4 KB) +	512 KB =			560 KB below the line

Keep the following items in mind regarding OS/390 and region size:

- OS/390 automatically assigns a job 32 MB of extended Private region whenever the REGION parameter is between 1 and 16 MB, and automatically assigns a job the largest allowable Private *below the line* storage size when the REGION parameter is above 16 MB.
- The limiting number of ServiceCenter tasks in your system is dependent upon the amount of Private *below the line* storage available at your site.
- ServiceCenter does not explicitly allocate any common area storage.
- Your installation may have OS/390 exits installed (for example, IEFUSI) to limit the amount of REGION available to a batch job or started task, regardless of the REGION size specified in the SC member of the SAMPLIB dataset.

Console Communication

ServiceCenter provides console support via the OS/390 Modify command (F). The general format of the modify command is:

```
F jobname,command parameter1 parameter2
```

The supported commands, along with a description and examples, are shown below.

DIAG

This command sets the internal diagnostic level for internal tracing. It is currently supported for SC3270 only.

Example: Set the diagnostic level to 1.

```
F SCJOB,DIAG
```

```
SC040 DIAG COMMAND BEING PROCESSED  
SC044 COMMAND COMPLETED SUCCESSFULLY
```

KILL

This command terminates a process. It is functionally equivalent to the kill command issued from the online status display. The KILL command will terminate the process after all must complete locks and database I/O for the process are complete. Obtain the process ID for the task to be terminated by issuing the STATUS command.

Example: Terminate process 345.

```
F SCJOB,KILL 345
```

```
SC040 KILL COMMAND BEING PROCESSED  
SC044 COMMAND COMPLETED SUCCESSFULLY
```

KILL -9

This command immediately terminates a process. Use this command only after the KILL command has proven to be unsuccessful. Obtain the process ID for the task to be terminated by issuing the STATUS command.

Example: Force immediate termination of process 345.

```
F SCJOB,KILL -9 345
```

```
SC040 KILL -9 COMMAND BEING PROCESSED  
SC044 COMMAND COMPLETED SUCCESSFULLY
```

QUIESCE

This command quiesces the VTAM applid used by ServiceCenter, preventing further logins from VTAM. Once you place the applid in the quiesce state, it cannot be reversed. ServiceCenter must be shut down and restarted to enable logins.

Example: Prevent further VTAM logins.

F SCJOB,QUIESCE

```
SC040 QUIESCE COMMAND BEING PROCESSED
SC004 SERVICE CENTER LOGONS DISABLED -- MRB1
SC044 COMMAND COMPLETED SUCCESSFULLY
```

SCENTER

This command starts an application process. The **SCENTER** command must be given an application to execute as a parameter.

Example: Start an agent task running the application **agent.marquee** which looks for "PROBLEM" events. In addition, turn on RTM tracing for this task.

F SCJOB,SCENTER AGENT.MARQUEE PROBLEM -RTM:3

SHUTDOWN

This command stops ServiceCenter. See *Stopping ServiceCenter* on page 36 for details.

Example: Stop ServiceCenter.

F SCJOB,SHUTDOWN

START

This command restarts any terminated servers used for client/server communications based on the parameters supplied at startup.

Example: Restart the TCP/IP server.

F SCJOB,STARTSERVERS

```
SC040 START COMMAND BEING PROCESSED
SC060 TCP LISTENER IS ON HOST(MVS) PORT#(2501)
SC060 TCP LISTENER IS ON HOST(MVS) PORT#(1426)
SC044 COMMAND COMPLETED SUCCESSFULLY
```

STATUS

This command provides a list of the currently executing processes. The list contains the process name, process ID, memory utilization, CPU utilization, I/Os, and semaphores held.

Example: List the currently executing processes.

F SCJOB,STATUS

```

SC040 STATUS COMMAND BEING PROCESSED
SC010  PID  USERID      CPU      MEMORY  I/O's    SEM
-----  -
SC011  14   marquee    5.13     538163  190      0
SC011  13   agent     62.97    765786  959      0
SC011  12   falcon    5.26     1158052 192      0
SC011  11   availability 1.52     451480  15       0
SC011  10   change    1.53     451480  13       0
SC011  9    problem   7.33     609417  530      0
SC011  8    report    1.50     451480  11       0
SC011  7    spool     1.67     465508  14       0
SC011  3    sctcplis 0.35     12288   0        0
SC011  2    sctcplis 0.63     12288   0        0
SC011  1    io        1.51     754588  0        2
SC044 COMMAND COMPLETED SUCCESSFULLY

```

WHERE

This command is used for diagnostic purposes only. It shows the current program stack for the given process. Using the process ID '*' (asterisk) will generate a report on all active processes.

Example: Show the program stack for process 133.

```
F SCJOB,WHERE 133
```

```

SC040 WHERE COMMAND BEING PROCESSED
SC044 COMMAND COMPLETED SUCCESSFULLY
SC050 -SIGROUTE SIGPAUS SLEEP EVSLEEP EVAL1 EVAL@@261549 MAINL

```

Making ServiceCenter Non-Swappable

Making ServiceCenter non-swappable ensures that during heavy system load, ServiceCenter has access to the necessary system resources. For example, if a few seconds go by without any activity in ServiceCenter, ServiceCenter is not swapped out and does not have to wait for system resources to become available.

To make ServiceCenter non-swappable, make an entry for Program Kernel in the Program Properties Table (PPT) per the applicable IBM System Modifications Manual, or make an entry for Program Kernel in the SYS1.PARMLIB(SCHEDxx) member being used by your installation.

Performance Groups in OS/390

ServiceCenter is an independent, online VTAM application that runs as either a started task or batch job under any *performance group* in OS/390. A direct correlation exists between the performance group in which ServiceCenter resides and the response time realized when using ServiceCenter. The higher the priority of the performance group in which ServiceCenter resides, the more resources allocated by the system to run ServiceCenter. Run ServiceCenter in a performance group equal to or higher than other online systems, just under JES and VTAM.

Caching

Cache is the memory allocated to keep units or blocks of file data in memory (the units of blocks being determined by block size). The more ServiceCenter is able to retrieve information from cache, the less it has to perform direct disk reads and thus the faster the response time. The most recently requested blocks are kept in memory regardless of the file in which they reside, resulting in the all physical SCDB files competing for cache.

To help you monitor the ServiceCenter operating environment, Peregrine Systems provides caching statistics in SYSPRINT when ServiceCenter is shut down. The blocksize, number of extents, I/O, cache hits, cache misses, and percentage of disk reads avoided are listed for the all physical SCDB files.

Table 5-2: SYSPRINT Statistics

File	Blocksize	Extents	I/Os	Hits	Misses	Avoided
0	512	1	32	86	6	93%
1	3860	1	1496	9921	1466	87%
2	3860	1	17	135	17	88%
3	3860	3	11537	122175	11422	91%
Total			13082	132317	12911	91%

The numbers specified under *I/Os* depict the actual number of times the system *read from* or *wrote to* the disk because the requested information was not in cache.

The numbers specified under *Hits* depict the number of reads that did not have to go to disk (that is, the number of reads where the requested information was found in cache). Conversely, the numbers specified under *Misses* depict the number of reads that went to disk because the system could not find the information in cache. The percentages specified under *Avoided* are the number of hits divided by the number of hits and misses.

Total I/Os, hits, and misses for the all physical SCDB files, as well as a *weighted average of disk reads avoided*, is determined by the activity for each file. The weighted average depicts how well ServiceCenter is utilizing cache. This cache utilization is based on the amount and type of activity performed by ServiceCenter.

For the *weighted average disk reads avoided*, an average of 80-90% is considered good; an average above 90% is considered excellent. Your cache size, specified in the run JCL for ServiceCenter, should change if the *avoided* figure is below 80%.

More About Cache

ServiceCenter requires a minimum cache size of 500,000 bytes. The default (if no cache size is specified) is 1,000,000 bytes. If the percentage of disk reads avoided is below 80%, increase your cache size accordingly until the percentage is 80% or above. Peregrine Systems recommends that you start with the default cache size and increase as needed. (This is done through trial and error. For example, you may initially increase your cache to a baseline of 1,000,000 bytes.)

Note: When you increase your cache size, you must increase your Region size by the same amount. For example, if your normal Region size is 4000 KB and you increase your cache size from the default of 500,000 bytes to 1,000,000 bytes (a net increase of 500,000 bytes), you would need to define your Region size as 500 KB larger, or 4500 KB.

If you defined an I/O cache of 1,000,000 bytes, your start-up JCL appears as follows:

```
// SC EXEC PGM=KERNEL,REGION=4500K,
// RUNPARMS='P=SYEXER C=1000000
```

Reblocking the File System

Peregrine Systems, Inc. provides the REXX routine RBLKREXX and the JCL REBLOCK program for adjusting the block size of ServiceCenter data sets.

Warning: Reblocking any ServiceCenter data set with a utility other than REBLOCK causes irreparable damage to the ServiceCenter file system. For this reason, exclude the ServiceCenter file system from DASD management products that compress or reblock files.

A sample reblock JCL is provided in member REBLOCK of the SAMPLIB data set. The program copies a source ServiceCenter file system to a set of destination files and reblocks them in the process.

To reblock a ServiceCenter filesystem:

- 1 Modify the JCL REBLOCK in the SAMPLIB data set to reflect your system environment. For this procedure, see the instructions in the JCL.
- 2 Ensure that ServiceCenter is shut down and no other application or process is accessing the file system.
- 3 Submit the job.

Using Alternate Screen Size Mode

By default, ServiceCenter uses the primary screen size, which is normally 24 rows and 80 columns. You can tell ServiceCenter to use the alternate screen size by specifying ALT in the userdata parameter of your logon command as follows:

```
login applid=sc,data=ALT
```

—Or—

```
login applid(sc) data(alt)
```

Server Resources

Shared Memory

A server uses approximately *8192 K* of base shared memory plus *110 K* per logged-on user.

For example, if you have 50 users, the shared memory requirement is $8192K + (110K * Users) + (4000 * Background Processes) = 13692K$, if background processes = 0.

The amount of shared memory allocated by ServiceCenter is specified by `shared_memory`: in the `PARMS` member of the `SAMPLIB` library.

Processes

A process starts for each ServiceCenter user. In addition, a process starts for each background scheduler.

For a 50-user system, where all users are client server, and assuming there are 17 background schedulers, the number of ServiceCenter processes on the server computer is $50 + 17 = 67$.

Semaphores

ServiceCenter uses 14 semaphores, regardless of the number of users logged on to the system.

OS/390 Initialization Parameters

When running ServiceCenter on OS/390, you can only specify the normal startup initialization parameters through the initialization file and not through parameters on the startup statement as in other ServiceCenter systems. Instead, in OS/390 the parameters (`RUNPARMS=`) on the startup (`EXEC`) statement are reserved for initialization parameters unique to OS/390.

The following example shows a typical OS/390 EXEC statement for starting ServiceCenter:

```
// SC EXEC PGM=KERNEL,
// RUNPARMS='C=2000000 M=8192 P=SYEXER'
```

The parameters and their values are case insensitive; that is, use either upper or lowercase letters.

Table 5-3: Initialization Parameter List

Syntax	Description
C=<size>	Size of the I/O Cache. This parameter defines the size of the memory block used to cache input and update operations and reduce the number of operations required. If not specified, this size defaults to 1,000,000 bytes. If C is set to any value less than 500,000, it will be reset to 500,000. The value of C can be set to as large a value as desired, but setting it to a value larger than 2,000,000 may have an adverse effect on system performance.
P=<pgmname>	Name of the ServiceCenter Startup Program to be run. Set this parameter to SYEXER when starting up ServiceCenter, or SCDBUTIL when starting up the database utility program. If not specified, the value of this parameter defaults to SYEXER .
S=<recno>	SMF Record Number. This parameter specifies the ServiceCenter SMF record number. If specified, recno must be a number that is greater than 128 and less than 255. If not specified, ServiceCenter will not produce an SMF record.
M=<pagesize>	Page size for memory management. Valid values for M are 4096, 8192, 16384, 32768 and 65536. Any other value will result in the default of 4096. (See <i>Avoiding Memory Problems</i> on page 44.)

6 Additional Configuration

CHAPTER

This chapter was designed to aid ServiceCenter Implementers setup SCAutomate and ServiceCenter SMF Recording on their systems.

Topics in this chapter include:

- *SCAutomate Base* on page 58
- *ServiceCenter SMF Recording* on page 60

SCAutomate Base

SCAutomate Base provides event management services through a collection of automation products that enable external applications to be integrated with ServiceCenter.

You must perform the following procedures to install SCAutomate Base:

- Verify prerequisite software.
- Assign a TCP port.
- Customize startup parameters.

Verifying Prerequisite Software

The following software is required to use SCAutomate base. Verify that this software is installed and configured before continuing with your installation.

OS/390 TCP/IP

The TCP/IP stacks currently supported are:

- IBM TCP/IP Version 3 Release 1 and higher.
- IBM Communications Server Version 2 Release 4 and higher.
- CA NetworkIT TCPaccess Version 5 Release 3, or Version 5 Release 2 with module LSCNCOM that supports SAS 6.5. This module is not currently shipped with NetworkIT TCPaccess and must be obtained from CA Technical Support.

Assigning a TCP Port

Assign a TCP port according to the instructions below that apply to your particular system.

IBM TCP/IP

Assign a port number to the OS/390 server in the OS/390 TCP/IP etc.services data set. You can find information on assigning a TCP port in the *IBM TCP/IP Version 2 Release 2.1 for MVS: Planning and Customization Manual*.

Network/ITCPaccess

Assign a TCP/IP port using the mvstcp parameter in the PARMS data set. You can find information on assigning a TCP port in the *SNS/NFS Installation and Administration Guide*.

Customizing Startup Parameters

Edit the PARMS member in HILEV.VERSION.SAMPLIB to make the following changes:

- scauto:scautod

Add the scauto:service name to reflect the TCP port name assigned in the previous step.

Note: This parameter is case sensitive.

- mvstcp_prefix:<TCPIP>

Remove the # from the beginning of this statement and change <TCPIP> to the data set prefix used for your TCP/IP data sets. If you omit this parameter, TCPIP is used as the default high-level qualifier. For example, if the data set name for the etc.services file is SYS1.TCPIP.ETC.SERVICES, then the following parameter is required: mvstcp_prefix:SYS1.TCPIP

- mvstcp_addrspc:<TCPIP>

Remove the # from the beginning of the statement and change TCPIP to the name of the TCP/IP address space. The default name is TCPIP.

Determine the address space names as follows:

- IBM TCP/IP

For IBM TCP/IP, the name is the job name for the TCP/IP started task/job. The job name is determined by looking at the TCPIPUSERID parameter in the TCPIP.TCPIP.DATA data set. If the TCPIPUSERID is MVSPROD, change the mvstcp_addrspc parameter to the following:
mvstcp_addrspc:MVSPROD

- Network/ITCPaccess

For Network/ITCPaccess TCPaccess, the name is the subsystem ID of the TCPIP address space. The ID is assigned during the installation of Network/ITCPaccess TCPaccess. If the subsystem ID is ACSS, add the following:

mvstcp_addrspc:ACSS

ServiceCenter SMF Recording

ServiceCenter can write SMF records for every user. SMF records are written when a user task terminates (usually at logoff) and when the system is shut down. Recorded information includes database usage, memory, CPU, and other system resources. You can find a complete listing of the ServiceCenter SMF records in member SMF in the SAMPLIB partitioned data set.

Note: Activating the ServiceCenter SMF capabilities is optional. By default, ServiceCenter does not write SMF records.

To activate ServiceCenter SMF recording:

- 1 Ensure that the load library is APF-authorized.
- 2 Select an unused SMF record number for ServiceCenter. The record number must be within the range: 128 to 255.
- 3 Specify the chosen SMF record number (*nnn*) in the ServiceCenter JCL on the EXEC PARM as S=*nnn*. For example:
`RUNPARMS='P=SYEXER I=applid C=500000 S=200'`

7 SCEmail

CHAPTER

SCemail is a ServiceCenter component that allows sending of E-mail to external mail applications. SCemail provides a monitor to handle ServiceCenter e-mail events. The monitor connects ServiceCenter into standard e-mail facilities and allows ServiceCenter users or applications (or both) to send mail through e-mail.

This chapter was designed to aid ServiceCenter Implementers and Administrators in setting up SCEmail on their systems.

Topics in this chapter include:

- *SCemail Setup in Text Mode* on page 62
- *SCemail Setup in GUI Mode* on page 70

SCEmail Setup in Text Mode

Set up sc.email for your particular needs.

Configuring sc.email

To configure sc.email to your site standards:

- 1 Open the Database Manager.
- 2 Type db on the command line.
- 3 Press Enter.

The Database Manager prompt displays.

- 4 Type mvsmail in the Format field.

A blank XMIT record displays.

- 5 Press Enter.

The defaults for SCEmail display in the *mvsmail.setup* form.

```
format: mvsmail.setup ** select option ** v> scroll: half
Name: XMIT_____Delete Event?:_____
Local Host Name: LOCAL.HOST.NAME_____
NJE Nodename: NJENODENAME_____
SMTP Jobname: SMTP_____
HLQ for temporary datasets: SC.MVSMAIL.TEMP_____
JCL
//MVSMAIL JOB (MVSMAIL),'MVSMAIL',CLASS=A,MSGCLASS=X_____
//STEP1 EXEC PGM=IKJEFT01_____
//SYSTSPRT DD SYSOUT=*_____
//SYSPRINT DD SYSOUT=*_____
//SYSTSIN DD *_____
_____
_____
_____
_____
PF1=Add PF2=Update PF3=Back PF4=Reset PF5=Regen PF6=Search PF7=export/unload
PF10=Advanced Search PF11=Open Inbox PF12=menu
```

- 6 Edit the format according to the following instructions:
 - Type the TCP Network Domain Name of the OS/390 system (for example, MVS.PEREGRINE.COM) in the local host name field.
 - Type the NJE Network Node Name in the NJE **Nodename** field.
 - Type the name of the job that is running SMTP on the OS/390 system (usually SMTP) in **SMTP Jobname** field.
 - Type the high level qualifier for the temporary data sets that are created and deleted for each e-mail message sent. sc.email appends **Ax** (where *x* is a 7-digit number taken from the number table in ServiceCenter) to the end of the high level qualifier.
 - Type true or false in the **Delete Event** field to indicate whether or not you want the e-mail event in ServiceCenter deleted after it is sent. The default is *false* if the field is left blank.
 - Modify the JOB card in the JCL to conform to your site standards.
- Note:** You can find the TCP Network Domain Name and NJE Network Node Name in the JOBLOG of the job that is running SMTP on the OS/390 system.
- 7 Select PF2=update to save the record.

Checking the Installation Components

Before starting the scheduler, ensure that all the supporting records were properly installed on your system. (See the SCEmail chapter of the *Event Services* guide) Search for records in the following files:

- schedule file
- info file (*info.startup*)
- number file

The Schedule File

To check for the schedule record:

- 1 Type sch on a command line.
- 2 Press Enter. A blank schedule record displays.
- 3 Type SCEmail in the class field.
- 4 Press Enter.

The specific schedule record for SCEmail displays.

```

format: schedule.looksee      ** select option **                v> scroll: half
                                Schedule File
Class: SCEmail_____ Expiration: 07/09/1999 16:21:20 User: _____
Number: 1_____ Repeat: 00:00:10_____ m: _ q: _ s: _ a:_
Status: rescheduled_____
Scheduled class: SCEmail_____ Action time: 07/09/1999 16:21:10
Name: SCEmail_____
Query: _____
Application: sc.email_____ Problem Status: _____
numbers1 array                numbers2 array
_____
_____
_____
_____
strings1 array                strings array
_____
_____
_____
_____
booleans array
PF1=Add PF2=OK PF3=Cancel PF4=Save PF5=Delete PF6=more PF12=Menu

```

The Info File

To check for the agent record:

- 1 Type info on a command line.
- 2 Press Enter.

The System Process Control Information displays.

- 3 Type SCEmail in the type field.
- 4 Press Enter.

The System Process Control Information for the SCEmail agent displays.

```
format: info.startup      ** select option **          v scroll:
half

                        System Process Control Information

type: SCEmail_____
description: send external email from eventout table_____

processes to start:
name                    parameters
SCEmail_____          scheduler_____
Suppress Restart:      SCEmail_____
_____                 30_____
_____                 1_____

Suppress Restart:      _____
_____                 _____
_____                 _____

Suppress Restart:      _____
_____                 _____
_____                 _____

Suppress Restart:      _____
PF1=Add PF2=OK PF3=Cancel PF4=Save PF5=Delete PF6=more PF12=Menu
```

The Number File

To check for the sequential schedule record:

- 1 Type number on a command line.
- 2 Press Enter.
A blank number record displays.
- 3 Type SCEmail in the Number Class field.
- 4 Press Enter.
The specific record for SCEmail displays.

```

format: number          ** select option **          > scroll: half
                        SEQUENTIAL NUMBER FILE

Number Class: SCEmail_____

Last Number Used: 0_____

Decrement? _____

Description: Used for building temporary datasets for SCEmail on MVS

THESE FIELDS ARE OPTIONAL.

Reset Point: 9999999_____
Increment/Decrement By: 1_____

USE THESE FIELDS FOR CHARACTER-TYPE NUMBER FIELDS ONLY.

Length: 7_
Prefix: _____
Suffix: _____

PF1=Add PF2=OK PF3=Cancel PF4=Save PF5=Delete PF6=more PF7=Print PF12=Menu

```

Starting the Scheduler

To start the scheduler:

- 1 Go to the system status display.
- 2 Type status on the command line.

```
format: system.status.lis Select Option - ENTER to refresh      v  scroll: half
          TOTAL USERS:  1 - use Refresh Display to refresh statistics_
```

CMD	User Name	PID	Device Id	Login Time	Idle Time
—	ocm_____	19	SYSTEM	08/04/1999 12:44:18	00:00:05
—	contract_____	18	SYSTEM	08/04/1999 12:44:11	00:00:56
—	availability_____	17	SYSTEM	08/04/1999 12:44:06	00:00:21
—	event_____	16	SYSTEM	08/04/1999 12:43:59	00:00:58
—	linker_____	15	SYSTEM	08/04/1999 12:43:54	00:00:20
—	lister_____	14	SYSTEM	08/04/1999 12:43:51	00:00:00
—	marquee_____	13	SYSTEM	08/04/1999 12:43:49	00:00:05
—	agent_____	12	SYSTEM	08/04/1999 12:43:44	00:00:21
—	sla_____	11	SYSTEM	08/04/1999 12:43:39	00:00:59
—	change_____	10	SYSTEM	08/04/1999 12:43:37	00:00:04
—	problem_____	9	SYSTEM	08/04/1999 12:43:35	00:00:24
—	report_____	8	SYSTEM	08/04/1999 12:43:34	00:01:00
—	spool_____	7	SYSTEM	08/04/1999 12:43:32	00:01:16
—	falcon_____	6	TCP00003	08/04/1999 12:43:30	00:00:07
—	io_____	1		08/04/1999 12:42:59	00:00:00

PF1=Display Recap PF2=Start Scheduler PF3=End PF4=broadcast message
 PF5=Show Locks PF6=display options PF7=Monitor PF8=Command Help PF10=Capture

3 Select the option to start the scheduler (PF2).

```

format: info.qbe          Select startup record          > scroll:
half
Name                      Description
alert.startup             PM alert and message processor
availability.startup      availability processor
change.startup            CM alert/notification processor
contract                  contract background agent
event.startup             Event Services processor
gie.startup               Generic Input Event Services processor
inactive.startup          dismiss inactive users
linker.startup            Problem/Incident Sync Task
lister.startup            Global List Builder Routine
marquee                  marquee agent
netview                  NetView Agent
ocm.startup               OCM processor
printer.startup           print scheduler
report.startup            report processor
scauto.startup            SCAUTO startup
scemail.startup          SCEMAIL startup
startup                  system startup default
vsamin                   VSAM file reader
vsamout                   VSAM file writer
SCEmail                  send external email from eventout table
PF3=end

```

4 Select SCEmail. (You may need to page down to the end of list.)

5 Place the cursor on SCEmail and press Enter to select.

```
format: system.status.lis Select Option - ENTER to refresh      v scroll: half
TOTAL USERS: 1 - use Refresh Display to refresh statistics_
```

CMD	User Name	PID	Device Id	Login Time	Idle Time
__	SCEmail_____	20__	SYSTEM__	08/04/1999 12:51:57	00:00:00
__	ocm_____	19__	SYSTEM__	08/04/1999 12:44:18	00:00:55
__	contract_____	18__	SYSTEM__	08/04/1999 12:44:11	00:00:46
__	availability_____	17__	SYSTEM__	08/04/1999 12:44:06	00:00:11
__	event_____	16__	SYSTEM__	08/04/1999 12:43:59	00:00:46
__	linker_____	15__	SYSTEM__	08/04/1999 12:43:54	00:00:09
__	lister_____	14__	SYSTEM__	08/04/1999 12:43:51	00:00:35
__	marquee_____	13__	SYSTEM__	08/04/1999 12:43:49	00:00:24
__	agent_____	12__	SYSTEM__	08/04/1999 12:43:44	00:00:10
__	sla_____	11__	SYSTEM__	08/04/1999 12:43:39	00:00:49
__	change_____	10__	SYSTEM__	08/04/1999 12:43:37	00:00:53
__	problem_____	9__	SYSTEM__	08/04/1999 12:43:35	00:00:12
__	report_____	8__	SYSTEM__	08/04/1999 12:43:34	00:00:49
__	spool_____	7__	SYSTEM__	08/04/1999 12:43:32	00:03:06
__	falcon_____	6__	TCPO0003__	08/04/1999 12:43:30	00:00:00
__	io_____	1__	_____	08/04/1999 12:42:59	00:00:00

```
PF1=display recap PF2=start scheduler PF3=end PF4=broadcast message
System background scheduler: SCEmail started at: 08/04/1999 12:51:58.
```

SCEmail Setup in GUI Mode

Set up sc.email for your particular needs.

Configuring sc.email



To configure sc.email to your site standards:

- 1 Type `mvsmail` in the **Form Name** field of the Database Manager dialog box.
- 2 Click Search or press Enter.

A blank XMIT record displays.

- 3 Click Search.

The defaults for SCEmail displays in the *mvsmail.setup* form.

ServiceCenter Email

Back Add Search

Name: XMIT Delete Event?:

Local Host Name: MVS.PEREGRINE.COM

NJE Nodename: NJNODENAME

SMTP Jobname: SMTP

HLQ for temporary datasets: SC.MVSMAIL.TEMP

JCL

```
//MVSMAIL JOB (MVSMAIL),MVSMAIL,CLASS=A,MSCLASS=X
//STEP1 EXEC PGM=IKJEFT01
//SYSTSPRT DD SYSOUT=*
//SYSPRINT DD SYSOUT=*
//SYSTIN DD *
```

Ready insert mvsmail.setup(db.search) [US]

- 4 Edit this form according to the following instructions:
 - Type the TCP Network Domain Name of the OS/390 system. For example, type `MVS.PEREGRINE.COM` in the local host name field.
 - Type the NJE Network Node Name in the **NJE Nodename** field.

- Type the name of the job that is running SMTP on the OS/390 system (usually SMTP) in the SMTP Jobname field.
- Type the high level qualifier for the temporary data sets that are created and deleted for each e-mail message sent. sc.email appends Ax (where x is a 7 digit number taken from the number table in ServiceCenter).
- Modify the JOB card in the JCL to conform to your site standards.

Note: You can find the TCP Network Domain Name and NJE Network Node Name in the JOBLOG of the job that is running SMTP on the OS/390 system.

- 5 Click Save to save the changes to the record.

Checking the Installation Components

Before starting the scheduler, check to ensure that all the supporting records were properly installed on your system.

Search for records in the following files:

- schedule file
- info file (*info.startup*)
- number file

The Schedule File

To check for the schedule record:

- 1 Click Command in the System Administrator's main menu.
- 2 Type schedule in the command line.
- 3 Press Enter.
A blank schedule record displays.
- 4 Type SCEmail in the Class field.
- 5 Press Enter.

The specific schedule record for SCEmail displays

SC Database

OK Cancel Save Add Delete

ID	Name	Number	Expiration	Class
1241685	SCEmail	1	01/01/1999 00:00:00	SCEmail

Schedule File

Name: SCEmail Class: SCEmail
 Number: 1 ID: 1241685 Expiration: 01/01/1999 00:00:00
 Status: Scheduled Class: SCEmail
 Action Time: 01/01/1999 00:00:00

Description | Strings | Numbers | Booleans / Times | Stacked Queries

Description:
 Repeat Interval: 00:00:30
 Monthly
 Quarterly
 Semi-Annually
 Annually

Problem Status:
 Application: sc.email
 Query:

Ready insert schedule.looksee.g [P]

The Info File

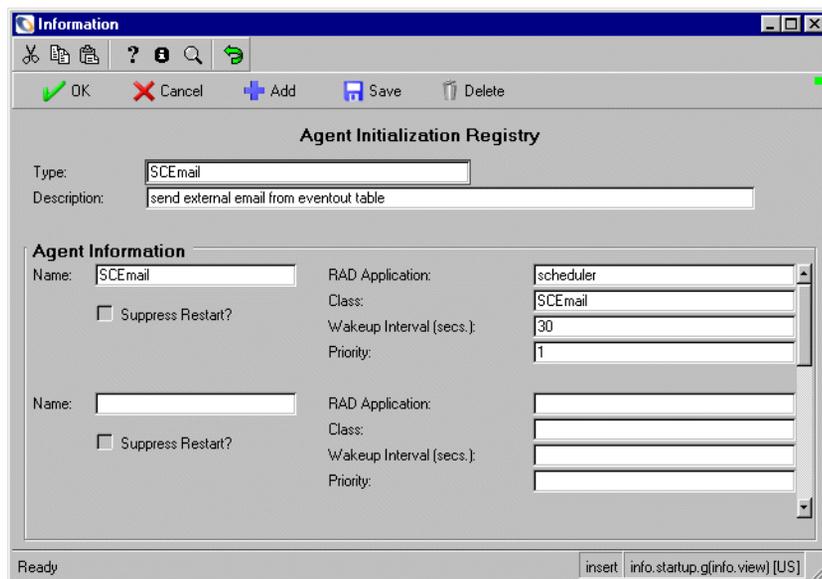
To check for the agent record:

- 1 Click Command in the system administrator's main menu.
- 2 Type info in the command line.
- 3 Press Enter.

The agent initialization registry displays.

- 4 Type SCEmail in the type field.
- 5 Press Enter.

The registry record for the SCEmail agent displays.



The Number File

To check for the sequential number record:

- 1 Click Command in the system administrator's main menu.
- 2 Type number in the command line.
- 3 Press Enter.
A blank number record displays.
- 4 Type SCEmail in the class field.
- 5 Press Enter.

The specific record for SCEmail displays.

The screenshot shows a dialog box titled "number: SCEmail" with a standard Windows-style title bar and toolbar. The main area is titled "Sequential Number File" and contains several input fields:

- Class:** SCEmail
- Last Number:** 0
- Decrement?:** (empty)
- Description:** Used for building temporary datasets for SCEmail on MVS
- Optional:**
 - Reset Point:** 9999999
 - Increment/Decrement By:** (empty)
- Character type only:**
 - Length:** 7
 - Prefix:** (empty)
 - Suffix:** (empty)

At the bottom, there is a "Ready" status indicator and a button labeled "insert number.g(db.view) [US]".

Starting the Scheduler

Note: You can only access the scheduler from an express client.



To start the scheduler:

- 1 Click the System Status button in the system administrator's main menu.
The system status list displays.

Command	User Name	PID	Device ID	Login Time	Idle Time
	CLIENT-12670	249	SYSTEM	03/14/02 15:43:34	00:21:16
	CLIENT-12680	260	SYSTEM	03/14/02 15:43:35	18:49:27
	spool	308	SYSTEM	03/14/02 15:43:36	00:02:26
	SCAuto Server	259	SCAuto	03/14/02 15:43:37	18:49:25
	report	289	SYSTEM	03/14/02 15:43:37	00:00:11
	problem	223	SYSTEM	03/14/02 15:43:38	00:00:21
	change	278	SYSTEM	03/14/02 15:43:39	00:00:22
	sla	316	SYSTEM	03/14/02 15:43:40	00:00:12
	agent	234	SYSTEM	03/14/02 15:43:41	00:00:16
	marquee	248	SYSTEM	03/14/02 15:43:42	00:00:07
	lister	257	SYSTEM	03/14/02 15:43:43	00:00:21
	linker	81	SYSTEM	03/14/02 15:43:44	00:00:07
	event	168	SYSTEM	03/14/02 15:43:45	00:00:05
	availability	303	SYSTEM	03/14/02 15:43:46	00:00:15
	contract	208	SYSTEM	03/14/02 15:43:47	00:00:15
	ocm	108	SYSTEM	03/14/02 15:43:49	00:00:14
	alert	332	SYSTEM	03/14/02 15:43:50	00:00:13
	sync	280	SYSTEM	03/14/02 15:43:51	00:00:04
	FALCON	345	Express-Wir	03/15/02 10:11:46	00:00:00

- 2 Click Start Scheduler.
The agent startup record list displays.

Name	Description
netview	NetView Agent
ocm.startup	OCM processor
printer.startup	print scheduler
report.startup	report processor
scauto.startup	SCAUTO startup
scemail.startup	SCEMAIL startup
startup	system startup default
vsamin	VSAM file reader
vsamout	VSAM file writer
alert.processor	Standard Alert processor
SCEmail	send external email from eventout table
Sync	

3 Double-click on SCEmail. (You may need to scroll to the end of list.)

This returns you to the system status list. SCEmail now appears on the list of active processes. A message in the status bar states, *System background scheduler: SCEmail started at mm/dd/yyyy hh:mm:ss.*

The screenshot shows a window titled "select option" with a toolbar containing icons for cut, copy, paste, help, search, and refresh. Below the toolbar is a "Back" button. The main area displays "TOTAL USERS: 2 - use Refresh Display to refresh statistics". On the left, there is a vertical menu with buttons: Refresh Display, Start Scheduler, Broadcast, Show Locks, Display Options, System Monitor, Command List, Summary, and Execute Commands. The main content is a table with the following data:

Command	User Name	PID	Device ID	Login Time	Idle Time
	CLIENT-12670	249	SYSTEM	03/14/02 15:43:34	00:21:30
	CLIENT-12680	260	SYSTEM	03/14/02 15:43:35	18:49:41
	spool	308	SYSTEM	03/14/02 15:43:36	00:02:40
	SCAuto Server	259	SCAuto	03/14/02 15:43:37	18:49:39
	report	289	SYSTEM	03/14/02 15:43:37	00:00:25
	problem	223	SYSTEM	03/14/02 15:43:38	00:00:35
	change	278	SYSTEM	03/14/02 15:43:39	00:00:36
	sla	316	SYSTEM	03/14/02 15:43:40	00:00:26
	agent	234	SYSTEM	03/14/02 15:43:41	00:00:30
	marquee	248	SYSTEM	03/14/02 15:43:42	00:00:21
	lister	257	SYSTEM	03/14/02 15:43:43	00:00:35
	linker	81	SYSTEM	03/14/02 15:43:44	00:00:21
	event	168	SYSTEM	03/14/02 15:43:45	00:00:19
	availability	303	SYSTEM	03/14/02 15:43:46	00:00:29
	contract	208	SYSTEM	03/14/02 15:43:47	00:00:29
	ocm	108	SYSTEM	03/14/02 15:43:49	00:00:28
	alert	332	SYSTEM	03/14/02 15:43:50	00:00:27
	sync	280	SYSTEM	03/14/02 15:43:51	00:00:18
	FALCON	345	Express-Win	03/15/02 10:11:46	00:00:00
	SCEmail	290	SYSTEM	03/15/02 10:33:15	00:00:01

The "SCEmail" row is highlighted with a red circle. At the bottom of the window, the status bar displays: "System background scheduler: SCEmail started at: 03/15/02 10:33:16." and "insert system.status.list.g [US]".

A

APPENDIX

ServiceCenter Messages

This appendix lists messages that may be displayed on the console when you run ServiceCenter.

SC000 SERVICECENTER (v.r). sp (Build)

This message displays on the console when you start ServiceCenter.

v.r	Version and Release (5.0)
sp	Service Pack (0)
build	Build number (0690????)
System Action:	None.
Operator Action:	None.

SC001 SERVICECENTER LOGONS ENABLED -- XXXX

This message displays on the console when you open the VTAM applid (XXXX) and enable logons.

System Action:	Logons are enabled.
Operator Action:	Terminal users may log on to ServiceCenter.

SC002 USER XXXX SYSTEM SHUTDOWN COMPLETE

This message displays on the console when you successfully shut down ServiceCenter.

xxxx: The User ID that started ServiceCenter.
 System Action: The system terminates.
 Operator Action: None.

SC003 SYSTEM TERMINATED -- termination reason

This message displays on the console when the system fails to start. The termination reason contains the reason for the failure.

System Action: ServiceCenter terminates
 Operator Action: Correct the cause of the error stated in the termination reason, additional information may be found in the SYSPRINT or SYSTEM output

SC004 SERVICECENTER LOGONS DISABLED -- XXXX

This message displays on the console when the VTAM applid (XXXX) for logons is disabled because of a quiesce command or RAD function. Logons cannot be re-enabled without restarting ServiceCenter.

System Action: Logons are disabled.
 Operator Action: None.

SC005 ABEND xx: lu=lllll, User=uuuuuuuu, Application=aaaaaaaaa, Panel=pppppp

This message displays on the console when a user task abends. The abend code (xx) is the signal number that intercepted the error:

09: SIGIDIV (abend 0C9)
 15: SIGFPDIV (abend 0CF)
 33: SIGFPE (abend 0CD)
 34: SIGILL (abend 0C1/0C2/0C3/0C6)
 35: SIGSEGV (abend 0C4)
 37: SIGABRT (abort)

Use the LU name (*lllll*), User ID (*uuuuuuuuu*), application (*aaaaaaaaaaa*) and the panel (*pppppp*) at the time of the error to determine the cause of the error.

System Action: The user task is removed from the system.

Operator Action: Correct the cause of the error.

SC006 VTAM OPEN FAILED - 3270 ACCESS DISABLED

This message displays on the console when ServiceCenter cannot open the VTAM application ID specified on the `applid` parameter.

System Action: 3270 connections are not available.

Operator Action: Check the SYSPRINT output for the following message:
*VTAM open failed for applid cccccc, return code=nn,
 error=nn*

The `applid` (*cccccc*) is the application ID specified on the `applid` parameter. Some of the common return codes and errors are listed below:

Return Code	Error	Definition
-------------	-------	------------

8	86	The <code>applid</code> parameter specifies a name that is not an application ID.
8	88	The <code>applid</code> parameter specifies a name that is already in use by another program.
8	90	The <code>applid</code> parameter specifies a name that is not defined to VTAM.

For a complete listing of all return codes and errors, see the *OPEN Macro Instruction* section in the IBM manual, *VTAM Programming*.

SC007 APPLID NOT PROVIDED - 3270 AND VTAM PRINTING DISABLED

This message displays on the console when ServiceCenter was not provided an `applid` parameter.

System Action: 3270 connections and VTAM printing are not available.

Operator Action: Verify that this is the intended mode of operation.

SC008 AUTHORIZATION CODE -- warning message

This message displays on the console when the authorization code is about to expire..

System Action: None

Operator Action: Contact Peregrine Systems Customer Support to obtain a new authorization code.

SC010 PID USERID CPU MEMORY IN USE I/O's SEM

This message displays on the console after you enter an `F scproc,STATUS` command.

SC011 ppp uuuuuu ccc mmmmmm mmmmmm iiii sss

SC011 messages follow for each task.

PID (ppp):	Process ID of the task.
USERID (uuuuuu):	ServiceCenter User ID.
CPU (ccc):	Accumulated CPU time.
MEMORY(mmmmmm):	Current memory allocated in bytes.
IN USE (mmmmm):	Current memory used in bytes.
I/O's (iiii):	Physical I/O's.
SEM (sss):	Semaphore Locks currently held.
System Action:	None.
Operator Action:	None.

SC022 WARNING - xx EXTENTS ALLOCATED TO FILE yy

This message displays on the console during ServiceCenter startup when a file (*yy*) has an excessive number of extents (*xx*), i.e. 14 or more extents.

System Action: None.

Operator Action: Schedule a time to copy the file to another allocation to reduce the number of extents.

SC025 I/O TASK TERMINATING ABNORMALLY

This message displays on the console when the I/O task fails.

System Action: The system terminates.

Operator Action: Look for messages in `sysprint` for the reason the I/O task failed.

SC027 UNABLE TO ALLOCATE FILE dsn

This messages displays on the console when the I/O task failed to allocate any of the first four SCDB files.

System Action: The system terminates.

Operator Action: Verify that the path parameter is referring to the correct files and that none of the files have been deleted nor renamed

SC028 SHORT BLOCK FOUND IN FILE dsn

This message displays on the console when the I/O task detects that one of the P4 physical files has been reblocked incorrectly.

System Action: The system terminates.

Operator Action: Reblock the mentioned file using the reblock utility in your SAMPLIB. For more information, refer to *Reblocking the File System* on page 53.

SC030 KERNEL DUMPING BECAUSE OF ABEND

This message displays on the console when the kernel task abends.

System Action: The system terminates.

Operator Action: Look for messages in sysprint for the reason the kernel task failed.

SC033 KERNEL ABEND REQUESTED BY ABORT

This message displays on the console when the kernel task is aborting because of a request by a console command or internal abort.

System Action: The system terminates with an abend.

Operator Action: Look for messages in sysprint for the reason the kernel task aborted.

SC035 KERNEL TERMINATING BECAUSE OF ABORT

This message displays on the console when the kernel task aborts because of an error.

System Action: The system terminates.

Operator Action: Look for messages in sysprint for the reason the kernel task aborted.

SC040 xxxxxx COMMAND BEING PROCESSED

This message displays on the console when a valid command (xxxxxx) was entered by modifying SC--F scproc,xxxxxx.

Command	Description
KILL -9 ppp:	Kill PID (<i>ppp</i>).
QUIESCE:	Disable VTAM logins.
STATUS:	Display system status.
SHUTDOWN:	Shut down the system after all users and background tasks terminate. Use OS/390 stop (P) command to shut down immediately.
scenter aaaaa bbbbb:	Run application (<i>aaaaa</i>) and pass parms (<i>bbbb</i>).

Note: The application must not attempt to interact with a user in foreground. The application must be designed to run solely in background.

System Action: The command processes.

Operator Action: None.

SC041 COMMAND SYNTAX IS INVALID

This message displays on the console when you type an invalid command.

System Action: The command is ignored.

Operator Action: Re-enter the correct command.

SC042 INVALID PID SPECIFIED FOR WHERE COMMAND

This message displays on the console when you type an invalid PID for the WHERE command.

System Action: The command is ignored.

Operator Action: Re-enter the correct command.

SC043 ERROR FREEING CIB

This message displays on the console when the command interface block cannot be freed.

System Action: The storage is not freed.

Operator Action: None

SC044 COMMAND COMPLETED SUCCESSFULLY

This message displays on the console after a command processes and a good return code is returned. For scenter commands, this means that scenter successfully started.

System Action: The system waits for another command.

Operator Action: None

SC045 COMMAND FAILED

This message displays on the console after a command processes and an error return code is returned.

System Action: The system waits for another command.

Operator Action: Determine the reason the command failed.

**SC050 XXXXXXXXXXX XXXXXXXXXXX XXXXXXXXXXX XXXXXXXXXXX XXXXX
XXX XXXXXXXXXXX XXXXXXXXXXX XXXXXXXXXXX XXXXXXXX PPPPP**

This message displays on the console as a result of a WHERE command. The module names (XXXXXXXXX) in the back trace display with the PID number (PPPPP).

System Action: None.

Operator Action: None.

SC059 INTERNAL START OF SCAUTOD LISTENER NOT REQUIRED

An attempt was made to start the SCAUTOD scheduler (scauto.startup) from within ServiceCenter. This is no longer required since ServiceCenter automatically starts SCAUTO if it finds the scauto parameter during system startup.

System Action: The SCAUTOD scheduler terminates.

Operator Action: Contact the ServiceCenter administrator.

SC060 TCP (application) LISTENER IS ON HOST (ccccccc) PORT# (nnnn)

The TCP/IP listener is initialized.

System Action: Clients may now connect to SC using the specified host (ccccccc) and service (nnnn).

Operator Action: None.

SC061 ERROR INITIALIZING TCP LISTENER

The TCP/IP listener could not be initialized.

System Action: Clients cannot connect to the server.

Operator Action: Check the SYSTEM output for messages of type LSCXnnn and contact Peregrine Systems Technical Support with complete messages.

SC062 TCP LISTENER SHUTDOWN COMPLETE

The TCP/IP listener terminates.

System Action: Task SCTCPLIS is detached.

Operator Action: None.

SC065 TCP LISTENER ENCOUNTERED A SEVERE ERROR, TERMINATING...

The TCP/IP listener terminates as a result of an unrecoverable error condition.

System Action: Clients cannot connect to the server.

Operator Action: Check the SYSTEM output for messages of type LSCXnnn and contact Peregrine Systems Technical Support with complete messages.

SC068 SYSTEM TASK ccccccc PID nnn HAS BEEN SHUTDOWN

The background process ccccccc terminated because of an earlier request to shut down the system.

System Action: The task terminated.

Operator Action: None.

SC069 SYSTEM TASK ccccccc PID nnn HAS TERMINATED

The background process *ccccccc* terminated.

System Action: The task terminated.

Operator Action: Contact the ServiceCenter Administrator to ensure that the task did not end prematurely.

SC070 SHUTDOWN MAY TAKE OVER 1 MINUTE

The system is being shut down and is waiting for the I/O task to terminate.

System Action: SC informs actives to terminate.

Operator Action: None.

SC072 TERMINATE PID nn, USER ccccccc REPLY 'Y' or 'N' TO DETACH",

The system is being shut down. The detach startup parameter is specified in the PARMS member of SAMPLIB dataset.

System Action: The user (*ccccccc*) could not be terminated.

Operator Action: Reply Y to terminate the task, N to allow the task 30 more seconds to achieve a normal termination.

SC073 SHUTDOWN WAITING FOR nn TASK(S) TO TERMINATE

The system is being shut down. nn are still active tasks. This message repeats every 30 seconds until no active tasks are found or until the shutdownattempts limit is reached. The shutdownattempts parameter is specified in the PARMS member of SAMPLIB dataset.

System Action: SC waits while active tasks terminate.

Operator Action: None.

SC074 SHUTDOWN DETACHING PID nn, USER ccccccc

The system is being shut down and forced the task identified by PID nn because it did not terminate by itself.

System Action: User (*ccccccc*) has been terminated.

Operator Action: None.

SC075 IR EXPERT SUCCESSFULLY SAVED ccccccc

The IR file (ccccccc) has been saved.

System Action: All updates to the IR file previously stored in memory are saved to disk.

Operator Action: None.

SC080 ABEND OCCURRED IN VTAM EXIT

This message displays on the console when the ServiceCenter logon or losterm VTAM exit abends. The abend is recovered and retried, so ServiceCenter does not abend.

System Action: If the logon exit abends, the user logon is rejected. If the losterm exit abends, the session is not terminated.

Operator Action: Monitor the system for any VTAM logon problems. If the error occurs repeatedly, ServiceCenter may need to be shut down and re-cycled to clear the error.

SC082 LOW ON ABOVE THE LINE STORAGE, SESSION TERMINATED

This message displays on the console when ServiceCenter is low on storage.

System Action: The attempt to start a new session was terminated because the OS/390 system did not have enough above the line storage to satisfy the storage request specified by the `atl_free` parameter in the PARMs member of SAMPLIB dataset.

Operator Action: Increase the OS/390 REGION size for the ServiceCenter job.

SC083 LOW ON BELOW THE LINE STORAGE, SESSION TERMINATED

This message displays on the console when ServiceCenter is low on storage.

System Action: The attempt to start a new session was terminated because the OS/390 system did not have enough below the line storage to satisfy the storage request specified by the `bitl_free` parameter in the PARMs member of SAMPLIB dataset.

Operator Action: Increase the OS/390 REGION size for the ServiceCenter job.

SC088 UNIDENTIFIED SERVER ON TCPSEVER PARAMETER

This message displays on the console when the tcpserver parameter contains an invalid value. The TCP/IP listener could not be initialized.

System Action: The listener process is not started. Clients cannot connect to the server

Operator Action: For an SC3270 listener the value must be SCTCP32S. For an SCAUTO listener the value must be SCASERVR. Check the PARMs file for an invalid tcpserver parameter. Valid values are SCENTER, SCTCP32S and SCASERVR

SC100 SC MALLOC VIRTUAL MEMORY SHORTAGE - NOTIFY ADMINISTRATOR

This message displays on the console when ServiceCenter is not able to obtain virtual storage for a memory allocation (MALLOC) request. This message is only sent to the console once for each user.

System Action: The memory allocation request fails.

Operator Action: Increase the region size available to ServiceCenter.

SC105 SC INVALID FREE STORAGE REQUEST

This message displays on the console when ServiceCenter passes an invalid storage address to free memory. This message is only sent to the console once for each user.

System Action: The memory free request fails.

Operator Action: None.

SC220 LOAD LIBRARY MUST BE APF-AUTHORIZED FOR SAF

This message displays on the console when the SAF security interface request fails because load library is not APF-authorized.

System Action: The SAF request fails. If the SAF request was from the SAF panel in login, the user logon fails.

Operator Action: APF-authorize the ServiceCenter load library.

SC250 SMF RECORDING REQUIRES APF AUTHORIZATION

This message is displayed on the console when SMF recording is requested (Kernel parm -S), but the ServiceCenter load library (or other libraries in the STEPLIB) are not APF-authorized.

System Action: SMF Recording is not activated.

Operator Action: APF-authorize the ServiceCenter load library.

SC255 SMF RECORD NUMBER xxx is INVALID

This message displays on the console when SMF recording is requested (Kernel parm -S), but the record number is not between 128 and 255.

System Action: SMF Recording is not activated.

Operator Action: Correct the SMF number and restart ServiceCenter.

SC330 INVALID WRITE FOR FILE xx, BLOCK bb BY USER uu, PID pp.

This message displays on the console when the I/O task detects either an invalid file number (*xx*) or an invalid block number (*bb*) for a write request by a user task. The user (*uu*) and PID (*pp*) identify the user.

System Action: The write request is ignored.

Operator Action: Schedule an LFSCAN to ensure file integrity.

SC340 FILE xx EXTENDED BY USER uuuuuu, PID ppp

This message displays in the system log when a user (*uuuuuu*) requests that the I/O task extend the ServiceCenter end-of-file for file number (*xx*).

Extending the end-of-file does not necessarily mean that the file is going into secondary extents.

System Action: The file is extended. The amount of space the file is extended depends on the secondary space allocation for the file.

Operator Action: Ensure the file extensions are expected.

B Installation Errors and Responses

APPENDIX

This appendix describes errors that may occur during your installation of ServiceCenter, and their responses.

Error 8, Return Code 86, 88, or 90

Occurs when the APPLID specified in the ACB statement is the same as your VTAM member name (major node). The APPLID does not exist on the system. See your Systems Programmer.

Resource Unavailable / Resource Inactive / Insufficient Region / Session Not Bound

These errors could be an across-domain link problem. If you have a multiple domain environment, ServiceCenter may reside on one computer, and the VTAM definitions on another computer. See your Systems Programmer.

Abend or JCL Error When the ServiceCenter Job is Submitted

The RUN JCL may not be properly modified. Ensure that you followed all the instructions in the JCL that explained the necessary modifications. If you renamed any of the unloaded data sets, the names may not match what is expected by the JCL.

Other reasons for this error include: (1) the VTAM ID may not be activated, or (2) no time parameter is set.

ServiceCenter Does Not Start

If you submitted ServiceCenter as a batch job, there may not be any initiators of the right class available.

The ServiceCenter Job Times Out

Set the time parameter in the run JCL to TIME=1440 to prevent time outs.

Security Abend

ServiceCenter cannot start because it cannot write to its data sets. ServiceCenter must be given read/write authority within the security package employed.

Messages LSCX830 and LSCX474

SAS runtime modules generate these messages if you are using Interlink TCP/IP and did not place the Interlink LINK library *first* in the STEPLIB concatenation.

Message LSCX470

The following message is generated when the ServiceCenter job does not have RACF authority to HFS. See *Open Edition requirements for TCP/IP* on page 24.

```
LSCX470 **** WARNING **** ERRNO = ESYS
Generated in SOCKET called from @@585615(SCTCPLI), offset 0001C8
Extended name: setupSocket
Vendor-specific TCP/IP error condition (IBM TCP/IP: errno=156).
socket() call failed in setupSocket(): Operating system interface failure
```

Message LSCX920

The following message is generated when the ServiceCenter job does not have access to the Open Edition file /dev/null or the file does not exist. See *Open Edition requirements for TCP/IP* on page 24.

```
LSCX920 **** WARNING **** ERRNO = EACCES
Generated in TAKSOCK called from MAIN(MAIN), offset 00026E
Unable to open shadow file (/dev/null) for socket.
```

Index

A

ABEND-AID 45
alternate screen size mode 53
application name 40
authorization code, switching to permanent 22

C

CA NetworkIT TCPAccess 23
caching 51
client resources 54
commands
 DIAG 48
 KILL 48
 KILL -9 48
 SCENTER 49
 shutdown 49
 START 49
 STATUS 49
 WHERE 50
customer support 9
customization, of startup parameters 21

D

DD statements 34, 45
disk space 12
dump parameters 45

E

education services 9
errors, during installation 89
EXEC SC 34

external shutdown 37

F

falcon, as an Operator ID 35

H

HILEV.VERSION.SAMPLIB 16, 18, 34

I

IBM TCP/IP 23, 24
initialization parameters, OS/390 54–55
installation
 JCL 32
 VTAM APPLID 18
internal shutdown 36

J

JCL installation 32
JOB CARD 34

K

KILL -9 command 38
KILL command 38

L

logging off 35
logging on
 security interface, activating 40
 security interface, deactivating 42
 security interface, passwords 41
 security interface, testing 41

- text client 35
- to ServiceCenter 35
- login security interface
 - activating 40
 - deactivating 42
 - passwords 41
 - testing 41

M

- mvssrv, host.service parameter 40

N

- named users, parameter in parms file 22
- namedusersfile 22

O

- Open Edition 24, 90
- Operator IDs 35
- OS/390
 - initialization parameters 54–55
 - installing SC3270 14–18
 - server prerequisites 12
 - stopping ServiceCenter 36–38
 - TCP port, assigning 24
 - TCP/IP 12

P

- parameters
 - applid 21
 - atl_free 44
 - btl_free 44
 - detach 38
 - dump 45
 - ir_language_path 21
 - ir_prefix 21
 - ir_volser 21
 - maxfileproc 32
 - mvstcp 23
 - mvstcp_addrspc 23, 59
 - mvstcp_prefix 23, 59
 - mvstcpexpress 23
 - nameduserfile 22
 - namedusersfile 22
 - path 21
 - REGION 44

- scauto 59
- shutdownattempts 37
- startup 19, 21
- parameters, OS/390 initialization 54–55
- PEND 34
- Peregrine Systems customer support 9
- performance groups 51
- permanent authorization code 22
- platform requirements, client and server 11
- prerequisites, SC3270 installation 12
- PROCLIB 34

R

- RACF 24, 90
- RBLKREXX routine 53
- REBLOCK program 53
- REGION 34
- region size requirements 46

S

- SAF interface 40
- SAF interface, password use by SAF interface 40
- SAMPLIB library 15
- SC3270 installation, prerequisite software 12
- SCAutomate Base
 - prerequisite software 58
 - startup parameters 59
 - TCP port 58
- SCLOAD 16
- semaphores, used in OS/390 54
- server processes 54
- server resources 54
- ServiceCenter
 - dump parameters 45
 - errors during installation 89
 - logging off 35
 - logging on 35
 - making non-swappable 50
 - reblocking the file system 53
 - SMF recording 60
 - startup parameters 21
 - stopping 36
- ServiceCenter, startup parameters 19, 21
- shared memory 54
- shutdown, messages 37

- SMF recording 60
- SNAP 45
- startup parameters
 - customizing 21
 - editing 19
- startup parameters, customizing 21
- STATUS command 38
- STEPLIB 24
- stopping ServiceCenter 36
- SYS1.VTAMLST 18
- SYSOUT 15
- SYSPRINT 45
- system requirements 12
- SYSTEM 45
- SYSUDUMP 45

T

- TCP port 19
- technical support 9
- TIME 34
- training services 9

U

- USSCMD 35

V

- volser number 15
- VTAM APPLID, installing 18
- VTAMLST 18

