CHAPTER

8

Using Break Windows

Introduction

Problems can arise from errors that you make, from host conditions, from hardware failures, and so on. Here are some ways to handle problems that may occur when you use SAS/CONNECT.

Break windows appear when you encounter problems such as errors or system interruptions. To solve such problems successfully, all users need to be familiar with break windows and their uses. Other problems can be solved through programming techniques, keyboard sequences, or workarounds. In addition to the information in this chapter, Chapter 44, "FAQs, Tips, and Troubleshooting," on page 459 can help you solve problems; and Chapter 23, "Starting and Stopping SAS/CONNECT Software," on page 193 contains information about debugging scripts.

The SAS System provides two break windows to enable you to handle system interruptions and error conditions while using SAS/CONNECT:

□ Communication Services Break Handler window

□ SAS/CONNECT Attention Handler window.

These break windows also enable you to interrupt processing if you need to. Depending on which program statements are executing, you may see either of these break windows.

The Communication Services Break Handler window contains selections for actions you can take in response to a problem or an interruption. Invoking the SAS/CONNECT Attention Handler window is one of the actions you can select. Typically, you select the Attention Handler window to cancel statements that you have submitted to the remote host.

SAS/CONNECT Attention Handler Window

If you need to interrupt processing of statements that were submitted to the remote host, issue a break signal:

OS/2	CTRL-C or CTRL-BREAK
Windows	CTRL-BREAK
UNIX	CTRL-C (This key combination can be reset with the UNIX STTY command. During a SAS session in DMS mode under The X Window System, you can select an interrupt button in the SAS Session Manager window to issue a break signal.)
OS/390	ATTN key
CMS	PA1

After you issue a break signal, the SAS/CONNECT Attention Handler window appears. It contains the selections shown in Display 8.1 on page 64.

Note: With the APPC access method, the SAS/CONNECT Attention Handler window will not be displayed if a CTRL-BREAK sequence is issued during a remote submit. Instead, the Global Handler window is displayed with a prompt for terminating the SAS session. △

Display 8.1   The SAS/CONNECT Attention Handler Window
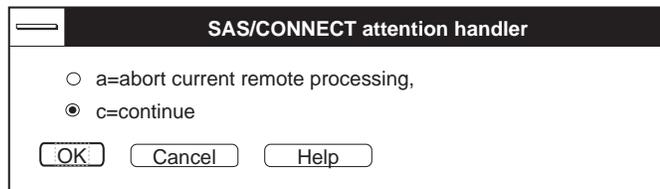
The following selections are available in the Attention Handler window:

a
aborts the statements that are currently being processed on the remote host but keeps the link open. This option is useful if you want to terminate a very large file transfer or if you want to interrupt a remote SAS job that is generating many error messages.

Note: Control may not be passed back to the local session immediately. △

c
continues the remote job. Select this option if you decide that you do not want to interrupt the remote job.

Communication Services Break Handler Window

If the application detects an error condition and you are running one of the terminal-based access methods, the Communication Services Break Handler window appears with one or more of the selections shown in Display 8.2 on page 65. This

window also appears if you issue a break signal while any communications access method is executing.

For example, if you are running the EHLLAPI access method and you specify a LIBNAME or a FILENAME statement for a file that does not exist on a remote host, you are notified of this problem by the Communication Services Break Handler window.

Display 8.2   The Communication Services Break Handler Window

```
┌─────────────────────────────────────────────────┐
│ ═══   Communication Services Break Handler        │
├─────────────────────────────────────────────────┤
│                                                   │
│   Break detected                                  │
│       ⊙  c to continue,                           │
│       ○  k to disconnect link,                    │
│       ○  d to debug,                              │
│       ○  r to resend,                             │
│       ○  s to snapshot screen,                    │
│       ○  x to subset command,                     │
│       ○  a to invoke Application Break Handler     │
│                                                   │
│                   ( OK )                          │
│                                                   │
└─────────────────────────────────────────────────┘
```
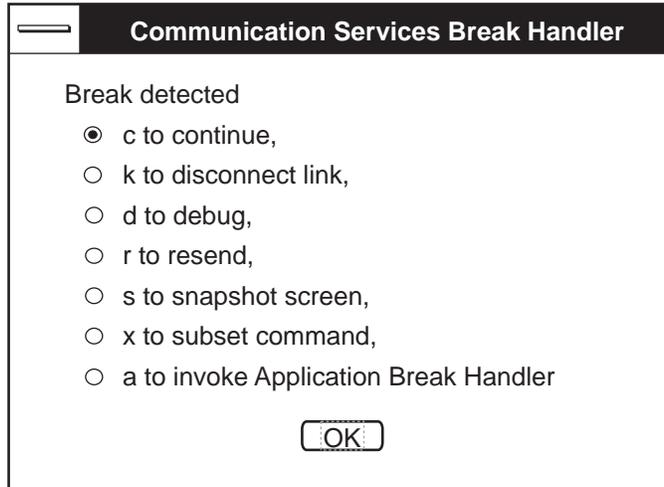
When the Communication Services Break Handler window appears, you can control what happens next by selecting specific actions from a menu. The selection items in this window differ across access methods, but the functions that are provided are the same for all access methods. These functions are:

c   continues processing of the command or the program that was running when the break signal was issued or when the host message was interrupted.

k   disconnects the link and aborts processing of the RSUBMIT, the SIGNON, or the SIGNOFF command.

d   invokes the debugger.

r   re-sends the last information that was transmitted over the link. Information travels over the link in units called *packets*. Occasionally, a packet is lost or is garbled, and link processing stalls. When this happens, use the **R** command to re-send the previous packet and resume processing.

s   snaps (copies) a message from a remote host screen to the local LOG window. Blank lines in the remote host screen are not copied. This command is applicable only for EHLLAPI connections. In situations where a message from the remote host causes an interruption, use this function to snap the message from the remote host into the LOG window where you can read it.

This item appears only in the window for EHLLAPI connections.

x   enters the subset mode of the local host.

a   invokes the Application Break Handler window.

When a Host Message Interrupts SAS/CONNECT

As stated earlier, messages from the host will interrupt link processing. The interruption continues until the host message is resolved. Therefore, you must respond to host messages so that processing can resume.

There are several ways to handle host interruptions, but all of them involve

- □ reading the host message
- □ responding to the message
- □ continuing SAS/CONNECT processing.

Reading the Host Message

If you have a TELNET or a TCP/IP connection, messages from the remote host are written to the SAS LOG window. To read them, go to the LOG window.

If you have an EHLLAPI connection, a message sent by the host is not automatically displayed in the LOG window of your local host. You may snap the message to your log by issuing the **S** command from the Communication Services Break Handler window (the window which appears when a message is detected), or you can "hot-key" to the 3270 session and read the message.

Responding to the Message

After the message from the remote host displays, you must respond to the message before link processing can resume.

For TELNET or TCP/IP connections, many of the messages from the remote host require no response. If you have a TELNET or a TCP/IP connection and the Communication Services Break Handler window displays, you can use the following commands to control the break window:

A   aborts the link with the remote host.

C   continues processing of command.

I   invokes the application break window.

T   types to the remote host.

If you have an EHLLAPI connection, switch to the 3270 session with which your local host is connected, and respond to the message in that session. For example, if you are running OS/2 on the local host, invoke the Task Manager, select the 3270 Terminal Emulation task, switch to the session to which you are linked, and respond to the message. In many cases, the only response necessary is to press the PA2 or ENTER key to clear the display.

Continuing SAS/CONNECT Processing

After you respond successfully to the host message, you can continue processing in one of the following ways:

- □ If you have a TELNET or a TCP/IP connection, the Communication Services Break Handler window re-appears after you type your response to the remote host. Select **C** to continue the link processing.
- □ If you have an EHLLAPI connection, return to your local SAS session and select **C** to continue the link processing. For example, if you are running OS/2 on the local

host, respond to the remote host's message in the 3270 session, re-invoke the Task Manager, and return to the SAS session under OS/2. Select **C** to continue the link processing.

Example

Suppose you write a program to execute on the remote host, but you misspell the name of a SAS data library that is referenced in a LIBNAME statement in the program. Without realizing your error, you issue the RSUBMIT command to execute your program. The remote host cannot find the library that is referenced in the program and issues an error message.

If you have an EHLLAPI connection, the host message brings up the Communication Services Break Handler window automatically. To respond, do the following:

1 Use the **S** command in the break window to view the message from the remote host. The **S** command takes a snapshot and displays it in the LOG window. You can print the saved snapshot if you want to save it for later examination. Alternatively, you can read the message when you switch to the remote host session to respond to the message. In this example, the remote host tells you that the library you named in the LIBNAME statement does not exist and asks if you want to create it.

2 Switch to the remote host session to respond to the message. For this example, type **YES** or **NO** and press ENTER. For many kinds of messages that you receive from the remote host, you can respond by simply pressing ENTER.

3 Switch back to the local SAS session and select **C** from the break window. The remote host resumes processing.