

Connect:Direct®

Console Operator's Guide

**Connect:Direct Console Operator's Guide
Sixteenth Edition**

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Part I

Using the Operator Interface

About Connect:Direct OS/390

Connect:Direct moves and manages business information by providing task automation, checkpoint/restart, error recovery, security, and many more features. Connect:Direct software offers choices in communications protocols, hardware platforms, and operating systems. It provides the flexibility to move information from mainframes to midrange systems to desktop and LAN-based workstations.

This book is specific to the following Connect:Direct products:

- ❖ Connect:Direct OS/390 that runs with the IBM OS/390 operating system
- ❖ Connect:Direct for VM/ESA that runs with the IBM Virtual Machine/Enterprise System Architecture (VM/ESA) operating system
- ❖ Connect:Direct for VSE/ESA that runs with the IBM Virtual Storage Extended/Enterprise System Architecture (VSE/ESA) operating system
- ❖ Connect:Direct for VSE/ESA CICS that runs with the IBM Customer Information Control System (CICS) interfaces in the IBM Virtual Storage Extended/Enterprise System Architecture (VSE/ESA) operating system

The *Connect:Direct Console Operator's Guide* is for operations staff who manage and monitor Process status and data transfer with Connect:Direct for mainframe platforms.

- ❖ IBM OS/390
- ❖ IBM Virtual Machine/Enterprise System Architecture (VM/ESA)
- ❖ IBM Virtual Storage Extended/Enterprise System Architecture (VSE/ESA)

This guide assumes knowledge of the applicable operating system, including its applications, network, and environment. If you are not familiar with the operating systems, refer to the appropriate library of manuals.

Connect:Direct OS/390 Operator Interface

The Operator Interface enables you to issue all Connect:Direct OS/390 commands from an OS/390 console by using a MODIFY command. The command results are displayed on the console.

This chapter explains how to:

- ❖ Invoke the Operator Interface
- ❖ Use the Operator Interface
- ❖ Interpret Connect:Direct operation error messages
- ❖ Stop Connect:Direct

Invoking the Connect:Direct OS/390 Operator Interface

You can access the Operator Interface after Connect:Direct initializes if you specify the Connect:Direct initialization parameters MCS.CLIST and MCS.SIGNON.

The syntax for the MCS.CLIST and MCS.SIGNON initialization parameters follows.

```
MCS.CLIST=console operator's CLIST library (dsn)
MCS.SIGNON=(SIGNON USERID=(userid,password)      -
           CASE=YES | NO-
           NETMAP=network map file name)
```

An automatic signon is issued after the first Connect:Direct CLIST is invoked using the information in MCS.SIGNON. This session is active until you submit a CLIST that contains a Connect:Direct SIGNOFF command.

Using the Operator Interface

You can create easy to remember customized Connect:Direct commands with the Operator Interface through a CLIST-type facility. The software supports symbolic substitution and CLIST-type parameters allowing you to alter Connect:Direct commands without changing the CLIST.

In a Connect:Direct/Plex, if you issue a console operator command to a Connect:Direct/Server, the console interface actually signs on to the Connect:Direct/Manager. As a result, any commands issued to Connect:Direct/Server are actually issued to the Connect:Direct/Manager, which is the only Connect:Direct/Plex member that accepts operator commands.

Sample Connect:Direct OS/390 CLISTS

The Connect:Direct sample CLIST library, OPLIST on the distribution tape, contains the sample CLISTS included in the following table. Use these CLISTS to build customized Connect:Direct commands with symbolic parameters that allow you to customize the CLIST at submission time. Sample operator commands for each CLIST are listed in the comment section.

CLIST Name	Command	Description
CMD		Provides a general format for requesting a Connect:Direct command.
DP	DELETE PROCESS	Shows six ways to delete a Process using this CLIST.
DUMP	STOP CD (Force)	Stops Connect:Direct using the FORCE parameter and produces abnormal ending (abend) 4095 and a dump.
IPRM	DISPLAY INITPARMS	Displays initialization parameters to the operator console. In a PLEX environment, it works as follows: <ul style="list-style-type: none"> • Displays the global initialization parameters • Defaults to the manager's local initialization parameters • Allows the name of a server to display the server's global and local initialization parameters
MSG	SELECT MSG	Shows a detail of the Connect:Direct message requested.
NM	SELECT NETMAP	Displays entire NETMAP or it allows for one parameter – a node name.
RLSE	CHANGE PROCESS	Shows three ways to release a Process.
SIGNOFF	SIGNOFF	Signs the operator off Connect:Direct.
SIGNON	SIGNON	Connects the operator to Connect:Direct.
SP	SELECT PROCESS	Shows six ways to display Process status information.
SS	SELECT STATISTICS	Shows seven ways to select statistics for display.
STATS	SELECT STATISTICS	Shows three ways to select statistics for display covering a specific time period.
STOP	STOP CD	Stops Connect:Direct using the STOP IMMEDIATE command. To perform an immediate shutdown in a PLEX environment from the operator console, issue the following command: F CD,STOP CDPLEX. To stop a specific server, use this command: F CD,STOP WHERE(SERVER=name)
SUB	SUBMIT PROCESS	Shows two ways to submit a Process.
SUSPEND	SUSPEND PROCESS	Shows four ways to suspend a Process.
SWAP	SWAP NODE	Swaps operator to another node in a multiple session environment.
TS	SELECT TASK	Shows active tasks.
VP	VIEW PROCESS	Displays a specific process.

Rules for Setting Up Connect:Direct OS/390 CLISTS

The following rules apply when setting up an operator CLIST:

- ❖ All operator CLISTS must have a PROC record as the first record in the CLIST. The PROC record defines the parameters and keywords that are passed to the CLIST.
- ❖ You can stack multiple Connect:Direct commands in one CLIST, but you only need one PROC statement.
- ❖ A number between **0** and **24** (inclusive) must follow the PROC identifier. This number indicates the number of positional parameters used by the CLIST.
- ❖ Parameter names (one to eight characters each) that correspond to each positional parameter follow the number. If no positional parameters exist, specify PROC 0.
- ❖ If you define more than one positional parameter on the PROC statement, you do not need to specify trailing positional parameters in the command unless you also specify a keyword parameter.
- ❖ Use commas to indicate null values.
- ❖ A positional parameter is terminated by the first blank encountered.
- ❖ You can specify optional keyword parameters after the positional parameters. Enclose default values in parentheses after each keyword name.
- ❖ Use a hyphen (-) to indicate that a Connect:Direct command continues on the next line. An example follows.

```
PROC 1 PNUM
SELECT PROCESS WHERE ( -
    PNUM=&PNUM)
```

- ❖ You can use comments in the CLIST only if you include an asterisk (*) in the first column.
- ❖ Sequence numbers are not allowed.

Submitting Connect:Direct OS/390 Commands

Submit the Connect:Direct commands to the Operator Interface using a Connect:Direct OS/390 MODIFY command interface. This operator command lets you submit a CLIST containing Connect:Direct commands, and modify the Connect:Direct commands by substituting symbolic parameters with real values.

The command format is:

```
F jobname,clist [options]
```

The following table describes the parameters in the preceding command format:

Parameter	Description
F	The short form of the Connect:Direct OS/390 MODIFY command.
jobname	The name on the job statement of the job stream that brings up the DTF. Caution: If jobname is a Connect:Direct/Server, the command is redirected to the Connect:Direct/Manager.
clist	The name of the CLIST containing the Connect:Direct command.
options	Optional positional and keyword parameters to be passed to the CLIST.

Examples

The following are CLIST examples and operator commands that submit the CLIST examples. As some examples show, you can use symbolic parameters to modify the Connect:Direct command at the time of submission. For example purposes, CDDTF is the jobname.

CLIST with Command and No Parameters

In this example, the CLIST SELX contains one command and no parameters.

```
PROC 0
SEL PROC WHERE (QUEUE=EXEC)
```

To execute SELX, type the following operator command.

```
F CDDTF,SELX
```

When you issue the operator command, a Select Process command for Processes on the executing queue initiates. As a result, a list of these Processes is displayed.

CLIST with Command and One Parameter

In this example, the CLIST SELQ contains one command and one positional parameter (SUBD).

```
PROC 1 SUBD
SEL PROC WHERE (QUEUE=&SUBD)
```

The following options present two ways to submit SELQ:

- ❖ When you issue the following command, TIMER (timer queue) is substituted for &SUBD. This command displays all Processes on the timer queue.

```
F CDDTF,SELQ TIMER
```

- ❖ When you issue the following command, ALL is substituted for &SUBD in the CLIST SELQ. This command displays all Processes on all queues.

```
F CDDTF,SELQ ALL
```

CLIST with Command and Multiple Parameters

In this example, the CLIST SUB contains one command, two positional parameters (PROC and PARMS), and one keyword parameter (SNODE).

```
PROC 2 PROC PARMS SNODE (OTHER.NODE)
SUB PROC=&PROC SNODE=&SNODE &PARMS
```

The following options present four ways to execute SUB:

- ❖ When you issue the following command, PAYROLL is substituted for &PROC. This substitution causes the Process PAYROLL to be submitted.

```
F CDDTF, SUB PAYROLL
```

Because no SNODE is specified, the SNODE defaults to OTHER.NODE.

- ❖ When you issue the following command, CHECKS is substituted for &PROC and HOLD=YES is substituted for &PARMS. These cause the Process CHECKS to be submitted as a held Process.

```
F CDDTF, SUB CHECKS HOLD=YES
```

Because no SNODE is specified, the SNODE defaults to OTHER.NODE.

- ❖ When you issue this command, ORDERS is substituted for &PROC and CD.CHICAGO is substituted for &SNODE. These cause the Process ORDERS to be submitted to run in session with the secondary node called CD.CHICAGO.

```
F CDDTF, SUB ORDERS, , SNODE=( CD . CHICAGO )
```

Because PROC and PARMS are positional parameters, commas are required.

- ❖ When you issue the following command, CONFIRM is substituted for &PROC and HOLD=NO, STARTT=(FRIDAY, NOON) is substituted for &PARMS. These submit the Process CONFIRM so that it runs at noon on Friday.

```
F CDDTF, SUB CONFIRM HOLD=NO, STARTT=( FRIDAY, NOON )
```

The SNODE defaults to OTHER.NODE because no SNODE is specified.

Interpreting Connect:Direct OS/390 Operation Messages

Connect:Direct operation diagnostic messages are formatted into multiple lines so that errors and exception conditions are easy to read. Operator messages are sent to:

- ❖ The route code given in the Connect:Direct initialization parameters
- ❖ The ddname NDMLOG, if it is allocated
- ❖ A printer, if you specify an LU1 (LOG.PRINTER) in the Connect:Direct initialization parameters

The COPY termination message (SVTM052I) is displayed in four lines, as follows:

- ❖ The first line shows the step label, the operation (COPY), the Process name and number, the associated node name, and the session class.
- ❖ The second line shows the FROM file name.
- ❖ The third line shows the TO file name.
- ❖ The fourth line shows the completion code and Connect:Direct message ID. If the COPY did not complete successfully, the first four positions of the last line contain the “####” flag.

When session errors occur, Connect:Direct formats the error message into two lines, as follows:

- ❖ The first line gives as much information as possible in the same format as the COPY termination message (Process name and number, and associated node name).
- ❖ The second line gives the text of the error message. The first four positions of the second line contain the "****" flag.

The following example shows two Connect:Direct operation error messages following a COPY termination message.

```
SVTM052I STEP1 COPY PROCESS1( 126)PNODE=CD.NODE.A (002)
FROM SYSA.SAM.DATA.SET
TO SYSB.TEST.SAM.DATA.SET
#### COMPLETED 00000010/SCPA010I
SVTM045I PROCESS1( 126)PNODE=CD.NODE.A
**** RPLERRCK:CD/CD SESSION FAILURE
SVTM050I PROCESS1( 126)PNODE=CD.NODE.A
**** PROCESS INTERRUPTED:RECOVERY INITIATED
```

Stopping Connect:Direct

To stop Connect:Direct OS/390 from the console, use the following command, which executes the STOP CLIST using the Operator Interface.

```
F jobname,STOP
```

For information on restarting Connect:Direct, see the *Connect:Direct OS/390 Installation Guide*, or contact your system programmer.

Connect:Direct for VM/ESA Operator Interface

You can issue all Connect:Direct for VM/ESA commands through the Operator Interface at the terminal where Connect:Direct for VM/ESA is started. This terminal is referred to as the Group Control System (GCS) VM operator's console.

This chapter explains:

- ❖ Invoking the Connect:Direct for VM/ESA Operator Interface
- ❖ Using the Operator Interface
- ❖ Interpreting Connect:Direct operation error messages
- ❖ Stopping Connect:Direct

Invoking the Connect:Direct for VM/ESA Operator Interface

You can access the Operator Interface after Connect:Direct initializes if you specify the Connect:Direct initialization parameters MCS.CLIST and MCS.SIGNON.

The following figure shows the syntax for the MCS.CLIST and MCS.SIGNON initialization parameters.

```
MCS.CLIST=filemode
MCS.SIGNON= (SIGNON USERID=(userid,password)-
            NETMAP=network map file name)
```

filemode is the letter that pertains to the disk containing the Connect:Direct CLIST library. You must access the Connect:Direct for VM/ESA DTF using this letter. Connect:Direct for VM/ESA expects that all Connect:Direct CLISTs are part of a set of files with a filetype of NDMOP.

When Connect:Direct finishes initializing, the Operator Interface displays the following write to operator with reply (WTOR) prompt.

```
id SOIA000A - ENTER COMMAND:
```

When you first reply to this message with a Connect:Direct CLIST, an automatic signon is issued using information in the MCS.SIGNON initialization parameter. This session stays active until you submit a CLIST that contains a Connect:Direct SIGNOFF command.

Using the Operator Interface

You can create easy to remember, customized Connect:Direct commands for use with the Operator Interface through a CLIST facility. The product supports symbolic substitution and command list parameters so that you can alter Connect:Direct commands without changing the command list.

Sample Connect:Direct for VM/ESA CLISTS

The Connect:Direct sample CLISTS, with filetype NDMOP on the distribution tape, include the sample CLISTS included in the following table. Use these CLISTS to build customized Connect:Direct commands with symbolic parameters that allow you to customize the CLIST at submission time.

CLIST Name	Command	Description
CMD		Provides a general format for requesting a Connect:Direct command.
DP	DELETE PROCESS	Shows six ways to delete a Process using this CLIST.
DUMP	STOP CD (Force)	Stops Connect:Direct using the FORCE parameter and produces a 4095abend and a dump.
RLSE	CHANGE PROCESS	Shows three ways to release a Process.
SIGNOFF	SIGNOFF	Signs the operator off Connect:Direct.
SP	SELECT PROCESS	Shows six ways to display Process information.
SS	SELECT STATISTICS	Shows seven ways to select Connect:Direct statistics for display.
STATS	SELECT STATISTICS	Shows three ways to select statistics for display covering a specific time period.
STOP	STOP CD	Stops Connect:Direct using the STOP IMMEDIATE command.
SUB	SUBMIT PROCESS	Shows three ways to submit a Process.
SUSPEND	SUSPEND PROCESS	Shows four ways to suspend a Process.

Rules for Setting Up Connect:Direct for VM/ESA CLISTS

The following rules apply when you set up an operator CLIST:

- ❖ All operator command lists must have a PROC record as the first record in the command list. The PROC record defines the parameters and keywords that are passed to the command list.
- ❖ You can stack multiple Connect:Direct commands in one command list, but you only need one PROC statement.
- ❖ A number between **0** and **24** (inclusive) must follow the PROC identifier. This number indicates the number of positional parameters used by the command list.
- ❖ Parameter names (one to eight characters each) that correspond to each positional parameter follow the number. If no positional parameters exist, specify PROC 0.
- ❖ If you define more than one positional parameter on the PROC statement, you do not need to specify trailing positional parameters in the command unless you also specify a keyword parameter.

- ❖ Use commas to indicate null values.
- ❖ A positional parameter is terminated by the first blank encountered.
- ❖ Specify optional keyword parameters after the positional parameters. Enclose default values in parentheses after each keyword name.
- ❖ Use a hyphen (-) to indicate that a Connect:Direct command continues on the next line. An example follows.

```
PROC 1 PNUM
SELECT PROCESS WHERE ( -
                      PNUM=&PNUM)
```

- ❖ You can use comments in the command list only if you include an asterisk (*) in the first column.
- ❖ Sequence numbers are not allowed.

Submitting Connect:Direct for VM/ESA Commands

Connect:Direct commands are submitted to the Operator Interface using the write to operator (WTO) and WTOR macros that send messages to and request replies from the Connect:Direct for VM/ESA operator.

Use the GCS REPLY command to communicate through the Connect:Direct for VM/ESA operator interface. The format of the REPLY command follows.

```
REPLY id !GCS command
```

The following table describes the parameters in the preceding syntax box:

Parameter	Description
REPLY	Specifies the GCS response command to messages sent as WTORs. You can abbreviate it as R .
id	Specifies the message ID number (0–99), as specified in the WTO or WTOR message requesting the response. You can omit leading zeros.
!GCS	Indicates to the Operator Interface that the following command is to be executed by GCS. If you type the GCS command, this parameter is required. !GCS is not required if you specify a Connect:Direct command or CLIST.
command	Specifies the response to the message, which is either any GCS command, a Connect:Direct for VM/ESA command, or a CLIST that contains the Connect:Direct commands you want to invoke. The maximum text length is 119 characters. Note: You can obtain a list of all messages awaiting reply, along with their message ID numbers, by issuing the Q REPLY command.

For the SOIA000A WTOR, which is the operator interface WTOR, you can reply with any Connect:Direct for VM/ESA operator command CLIST provided. For example, the WTOR message can be similar to the following.

```
04 SOIA000A - ENTER COMMAND
```

You could then reply as follows.

```
R 04 !GCS FILEDEF CDCMDS DUMMY
```

This reply does a FILEDEF command for ddname CDCMDS and directs the output to the terminal.

At any time during processing, you can refresh the screen with the current outstanding reply IDs by issuing the Q REPLY command from the Connect:Direct for VM/ESA GCS console.

Examples

The following examples show CLISTs and the operator commands that submit them. As some examples show, you can use symbolic parameters to modify the Connect:Direct command at the time of submission.

CLIST with Command and No Parameters

In this example, the CLIST SELX contains one command and no parameters.

```
PROC 0
SEL PROC WHERE (QUEUE=EXEC)
```

To execute SELX, type the following operator command.

```
R 04 SELX
```

When you issue this operator command, a Select Process command for Processes on the executing queue is performed.

CLIST with Command and One Parameter

In this example, the CLIST SELQ contains one command and one positional parameter (SUBD).

```
PROC 1 SUBD
SEL PROC WHERE (QUEUE=&SUBD)
```

The following options present two ways to execute the SELQ CLIST:

- ❖ When you issue this command, EXEC (executing queue) is substituted for &SUBD. This command displays all Processes on the executing queue.

```
REPLY id SELQ EXEC
```

- ❖ When you issue this command, ALL is substituted for &SUBD in the CLIST SELQ. This command displays all Processes on all queues.

```
REPLY id SELQ ALL
```

CLIST with Command and Multiple Parameters

In this example, the CLIST SUB contains one command, two positional parameters (PROC and PARMS), and one keyword parameter (SNODE).

```
PROC 2 PROC PARMS SNODE(OTHER.NODE)
SUB PROC=&PROC SNODE=&SNODE &PARMS
```

The following options present four ways to execute the SUB CLIST:

- ❖ When you issue this command, PAYROLL is substituted for &PROC. This substitution causes the Process PAYROLL to be submitted.

```
REPLY id SUB PAYROLL
```

Because no SNODE is specified, the SNODE defaults to OTHER.NODE.

- ❖ When you issue this command, CHECKS is substituted for &PROC and HOLD=YES is substituted for &PARMS. These cause the Process CHECKS to be submitted as a held Process.

```
REPLY id SUB CHECKS HOLD=YES
```

Because no SNODE is specified, the SNODE defaults to OTHER.NODE.

- ❖ When you issue this command, ORDERS is substituted for &PROC and CD.CHICAGO is substituted for &SNODE. These cause the Process ORDERS to be submitted to run in session with the secondary node called CD.CHICAGO.

```
REPLY id SUB ORDERS , ,SNODE(CD.CHICAGO)
```

Because PROC and PARMS are positional parameters, commas are required.

- ❖ When you issue this command, CONFIRM is substituted for &PROC and HOLD=NO,STARTT=(FRIDAY,NOON) is substituted for &PARMS. These submit the Process CONFIRM so that it runs at noon on Friday.

```
REPLY id SUB CONFIRM HOLD=NO,STARTT=(FRIDAY,NOON)
```

Because no SNODE is specified, the SNODE defaults to OTHER.NODE.

Interpreting Connect:Direct for VM/ESA Operation Messages

Connect:Direct operation diagnostic messages are formatted into multiple lines so that errors and exception conditions are easy to see. Operation messages are sent to the GCS VM operator console. If you specify an LU1 printer (LOG.PRINTER) in the Connect:Direct initialization parameters, the messages are also printed.

The COPY termination message (SVTM052I) is displayed in four lines, as follows:

- ❖ The first line shows the step label, the operation (COPY), the Process name and number, the associated node name, and the session class.
- ❖ The second line shows the FROM file name.
- ❖ The third line shows the TO file name.

- ❖ The fourth line shows the completion code and Connect:Direct message ID. If the COPY did not complete successfully, the first four positions of the last line contain the “####” flag.

When session errors occur, Connect:Direct formats the error message into two lines, as follows:

- ❖ The first line gives as much information as possible in the same format as the COPY termination message (Process name and number and associated node name).
- ❖ The second line gives the text of the error message. The first four positions of the second line contain the “****” flag.

The following example shows two Connect:Direct operation error messages following a COPY termination message.

```
SVTM052I STEP1 COPY PROCESS1( 126)PNODE=CD.NODE.A (002)
FROM SYSA FILE
TO SYSB.TEST.SAM.DATA.SET
#### COMPLETED 00000010/SCPA010I
SVTM045I PROCESS1( 126)PNODE=CD.NODE.A
**** RPLERRCK:CD/CD SESSION FAILURE
SVTM050I PROCESS1( 126)PNODE=CD.NODE.A
**** SESERRPR:PROCESS RECOVERY INITIATED
```

Stopping Connect:Direct

You can stop Connect:Direct for VM/ESA from the console by using one of the following methods:

- ❖ The STOP CLIST through the Operator Interface.
- ❖ A CMD CLIST that includes the STOP Connect:Direct command.

For information on restarting Connect:Direct, see the *Connect:Direct for VM/ESA Installation Guide*, or contact your system programmer.

Examples

The following examples show ways to stop Connect:Direct for VM/ESA.

STOP CLIST

The following command stops Connect:Direct with the immediate (I) option.

```
REPLY id STOP I
```

The following command stops Connect:Direct with the quiesce (Q) option.

```
REPLY id STOP Q
```

CMD STOP CLIST

The following command stops Connect:Direct with the immediate (I) option.

```
REPLY id CMD STOP CD I
```

The following command stops Connect:Direct with the quiesce (Q) option.

```
REPLY id CMD STOP CD Q
```

Connect:Direct for VSE/ESA Operator Interface

The Operator Interface enables all Connect:Direct for VSE/ESA commands to be issued from a VSE console. The command results are displayed on the console.

This chapter explains how to:

- ❖ Invoke the Operator Interface
- ❖ Use the Operator Interface
- ❖ Interpret Connect:Direct operation messages
- ❖ Stop Connect:Direct

Invoking the Connect:Direct for VSE/ESA Operator Interface

You can access the Operator Interface after Connect:Direct initializes if you specify the Connect:Direct initialization parameter MCS.SIGNON.

The syntax for the MCS.SIGNON initialization parameter follows.

```
MCS.SIGNON=(SIGNON USERID=(userid,password) -  
            CASE=YES | NO-  
            NETMAP=network map file name)
```

An automatic signon is issued after the first Connect:Direct CLIST is invoked using the information in MCS.SIGNON. This session is active until the operator issues a Connect:Direct SIGNOFF command.

Completing Initialization

After the Connect:Direct for VSE/ESA Operator Interface completes initialization, the operator console displays the following prompt.

```
Connect:Direct - READY FOR COMMAND:
```

If an initialization error occurs, the Operator Interface displays the error. Possible errors are:

- ❖ USERID NOT SPECIFIED
- ❖ PASSWORD NOT SPECIFIED

- ❖ NETMAP FILE IS NOT ALLOCATED
- ❖ MESSAGE FILE IS NOT ALLOCATED
- ❖ MSG FILE ERR RC=xx MSG=xxxxxxx
- ❖ UNABLE TO OPEN CLIST
- ❖ TEMP DSN IS NOT ALLOCATED

The message text associated with message IDs returned by the Operator Interface are displayed if the message file is allocated. If the message file is not allocated, the operator receives a return code and message ID only.

Setting Up Connect:Direct for VSE/ESA Command CLISTs

You can create easy to remember, customized Connect:Direct commands with the Operator Interface through a CLIST facility. The product supports symbolic substitution and CLIST parameters so that you can alter Connect:Direct commands without changing the CLIST.

Sample Connect:Direct for VSE/ESA CLISTs

The Connect:Direct sample CLIST library, distributed as type O members in the Connect:Direct for VSE/ESA source library, contains the sample CLISTs included in the following table. You can use these CLISTs to build customized Connect:Direct commands; they contain symbolic parameters that allow you to customize the CLIST at submission time. Sample operator commands for each CLIST are listed in the comment section.

CLIST Name	Connect:Direct Command	Description
CP	CHANGE PROCESS	Shows command to change a Process already in a queue.
DP	DELETE PROCESS	Shows command to delete a Process.
DT	DELETE TYPE	Shows command to delete a record from the type defaults file.
DU	DELETE USER	Shows command to delete a user.
FP	FLUSH PROCESS	Shows command to delete an executing Process.
IT	INSERT TYPE	Shows command to insert a record in the type defaults file.
IU	INSERT USER	Shows command to add a user.
NM	SELECT NETMAP	Shows command to display the Network Map.
PS	SUSPEND PROCESS	Shows command to place an executing Process on the hold queue.
SN	STOP CD	Shows command to immediately stop Connect:Direct.
SP	SELECT PROCESS	Shows command to display Process status information.
SS	SELECT STATISTICS	Shows command to select Connect:Direct statistics for display.
ST	SELECT TYPE	Shows command to display record in the type defaults file.
SU	SELECT USER	Shows command to display a Connect:Direct userid in the authorization file.
SUB	SUBMIT PROCESS	Submits a Process for execution.

CLIST Name	Connect:Direct Command	Description
UT	UPDATE TYPE	Shows command to update a record in the type defaults file.
UU	UPDATE USER	Shows command to update a Connect:Direct user.

Rules for Setting Up Connect:Direct for VSE/ESA CLISTS

The following rules apply when setting up an operator CLIST:

- ❖ All operator command lists must have a PROC record as the first record in the command list. The PROC record defines the parameters and keywords that are passed to the command list.
- ❖ You can stack multiple Connect:Direct commands in one command list, but you only need one PROC statement.
- ❖ A number between **0** and **24** (inclusive) must follow the PROC identifier. This number indicates the number of positional parameters used by the command list.
- ❖ Parameter names (one to eight characters each) that correspond to each positional parameter follow the number. If no positional parameters exist, specify PROC 0.
- ❖ If you define more than one positional parameter on the PROC statement, you do not need to specify trailing positional parameters in the command unless you also specify a keyword parameter.
- ❖ Use commas to indicate null values.
- ❖ A positional parameter is terminated by the first blank encountered.
- ❖ Specify optional keyword parameters after the positional parameters. Enclose default values in parentheses after each keyword name.
- ❖ Use a hyphen (-) to indicate that a Connect:Direct command continues on the next line. An example follows.

```
PROC 1 PNUM
SELECT PROCESS WHERE ( -
                        PNUM=&PNUM)
```

- ❖ You can use comments in the command list only if you include an asterisk (*) in the first column.
- ❖ Sequence numbers are not allowed.

Submitting Connect:Direct for VSE/ESA Commands

You can submit Connect:Direct commands to the Operator Interface by keying the commands on the command line of the console. The Operator Interface lets you submit native commands and CLISTS containing Connect:Direct commands. Connect:Direct commands can be modified using symbolic parameters.

To type a native command, the operator must use the following format.

```
ID Connect:Direct command
```

In the preceding format:

Parameter	Description
ID	The reply identifier of the partition where the Operator Interface is running.
Connect:Direct command	The command syntax for typing Connect:Direct commands, as described in the <i>Connect:Direct for VSE/ESA User's Guide</i> .

The CLIST command format follows.

```
ID %clist [parms]
```

The following table describes the parameters in the preceding command format:

Parameter	Description
ID	Specifies the reply identifier of the partition where the Operator Interface is running.
%clist	Specifies the name and location of the CLIST containing the Connect:Direct command. The location includes the member type and member name in parentheses. If you do not specify a member type, then member type O is assumed. The percentage symbol (%) denotes a CLIST command. The following examples shows two different ways you can type the CLIST. %O (STATS) %STATS You can also type Connect:Direct commands directly using the Connect:Direct command syntax outlined in the <i>Connect:Direct for VSE/ESA User's Guide</i> . Type these commands using the format in the previous example, but do not include the percentage symbol in the format. Use the percentage symbol only when denoting CLIST names.
parms	Denotes any parameters to be passed to the CLIST.

Examples

The following are examples of native commands and commands executed through CLISTs.

As the CLIST examples show, you can use symbolic parameters to modify the Connect:Direct command at the time of submission. For the CLIST examples, 41 is the reply ID from partition F4.

Native Command

This example shows a native command which issues a **SELECT PROCESS** command to display Processes that are in the executing queue.

```
41 SEL PROC WHERE (QUEUE=EXEC)
```

CLIST with Command and No Parameters

In this example, the CLIST SELX contains one command and no parameters.

```
PROC 0
SEL PROCESS WHERE(Queue=EXEC)
```

To execute the SELX CLIST, type the following operator command.

```
41 %SELX
```

A SELECT PROCESS command for Processes on the executing queue are performed when you issue the command.

Connect:Direct Command with One Parameter

The following Connect:Direct command submits the Process named PAYROLL.

```
41 SUB PROC=PAYROLL
```

Connect:Direct Commands with Multiple Parameters

This example submits the Connect:Direct Process CHECKS with the parameter HOLD=YES. The Process is placed in the hold queue until released or deleted.

```
41 SUB PROC=CHECKS HOLD=YES
```

In the following example, ORDERS is the Process being submitted. The SNODE is CD.CHICAGO.

```
41 SUB PROC=ORDERS SNODE=CD.CHICAGO
```

CLIST with Command and Multiple Parameters

In this example, the CLIST SUB contains one command and two positional parameters, PROC and SNODE.

```
PROC 2 PROC PARM S SNODE(OTHER.NODE)
SUB PROC=&PROC SNODE=&SNODE &PARMS
```

The following options present four ways to execute the SUB CLIST:

- ❖ When you issue this command, PAYROLL is substituted for &PROC. This substitution causes the Process PAYROLL to be submitted.

```
41 %SUB PAYROLL
```

- ❖ When you issue this command, CHECKS is substituted for &PROC and HOLD=YES is substituted for &PARMS. These cause the Process CHECKS to be submitted as a held Process.

```
41 %SUB CHECKS HOLD=YES
```

- ❖ When you issue this command, ORDERS is substituted for &PROC and CD.CHICAGO is substituted for &SNODE. These cause the Process ORDERS to be submitted to run in session with the secondary node called CD.CHICAGO.

```
41 %SUB ORDERS , ,SNODE=(CD.CHICAGO)
```

- ❖ When you issue this command, CONFIRM is substituted for &PROC and HOLD=NO,STARTT=(FRIDAY,NOON) is substituted for &PARMS. These submit the Process CONFIRM so that it runs at noon on Friday.

```
41 %SUB CONFIRM HOLD=NO,STARTT=(FRIDAY,NOON)
```

Connect:Direct for VSE/ESA Operation Messages

Connect:Direct operation diagnostic messages are formatted into multiple lines so errors and exception conditions are easy to see. The messages are also printed if you specify an LU1 printer (LOG.PRINTER) in the Connect:Direct initialization parameters.

The COPY termination message (SVTM052I) is given in four lines, as follows:

- ❖ The first line shows the step label, the operation (COPY), the Process name and number, the associated node name, and the session class.
- ❖ The second line shows the FROM file name.
- ❖ The third line shows the TO file name.
- ❖ The fourth line shows the completion code and Connect:Direct message ID. If the COPY did not complete successfully, the first four positions of the last line contain the “####” flag.

When session errors occur, Connect:Direct formats the error message into two lines, as follows:

- ❖ The first line gives as much information as possible in the same format as the COPY termination message (Process name and number and associated node name).
- ❖ The second line gives the text of the error message. The first four positions of the second line contain the “****” flag.

The following example shows two Connect:Direct operation error messages following a COPY termination message.

```
SVTM052I STEP1 COPY PROCESS1( 126)PNODE=CD.NODE.A (002)
  FROM SYSA.SAM.DATA.SET
  TO   SYSB.TEST.SAM.DATA.SET
  #### COMPLETED 0000010/SCPA010I
SVTM045I                PROCESS1( 126)PNODE=CD.NODE.A
  **** RPLERRCK:CD/CD SESSION FAILURE
SVTM050I                PROCESS1( 126)PNODE=CD.NODE.A
  **** SESERRPR:PROCESS RECOVERY INITIATED
```

Displaying Connect:Direct Message Text

The !M command, followed by a Connect:Direct message identifier, displays the message text on the console. For example, !M SCPA010I displays the message text for the message SCPA010I, as follows:

```

41 !M SCPA010I
Send of a definite response failed.

An attempt to send a definite response to a previous request
failed.

SYSTEM ACTION:  An error code and message ID are sent and control
                 is returned to the calling module.

RESPONSE:       Execute the failing process step again.  If
                 the error occurs repeatedly, contact your
                 systems programmer with the details.

```

Responding to Messages

The Connect:Direct for VSE/ESA DTF requires a response on some messages.

When responding to one of these messages, type the reply ID and an exclamation point, plus the message number in addition to your reply. For example, assume that the following message is displayed on the operator console.

```
NDM0A 07:SVST000A M 180,TAPE01,SL,6250 BPI,NDM JOB,TEST.TAPE,--- OR REPLY CANCEL
```

You would reply by typing the following text.

```
41 CANCEL
```

If you give an invalid response, the Operator Interface displays the following.

```
CD - INVALID RESPONSE:text of invalid response
```

Listing Multiple Session Signons

The !NODE command displays the Connect:Direct nodes that the console operator is currently signed on to. The Connect:Direct node name, the userid, and the VTAM APPLID are displayed for each session. An asterisk in the ACTIVE column indicates that you are currently in session with a node. The following example shows how this information is displayed.

CD	-	<u>NODE NAME</u>	<u>USERID</u>	<u>APPLID</u>	<u>ACTIVE</u>
		LOCAL.NODE	OPERATOR		*
		REMOTE.NODE	REMOPR	APPL01	

Stopping Connect:Direct

You can stop Connect:Direct for VSE/ESA from the console by using one of the following methods:

- ❖ STOP CLIST through the Operator Interface
- ❖ STOP CD command

This example demonstrates how to stop Connect:Direct with the STOP Connect:Direct command and the immediate (I) parameter.

```
41 STOP CD I
```

For information on restarting Connect:Direct, see the *Connect:Direct for VSE/ESA Administration Guide*.

Part II

Tape-handling Procedures

Connect:Direct OS/390 Tape-handling Procedures

This chapter describes tape-handling procedures for Connect:Direct OS/390.

Understanding Connect:Direct OS/390 Tape Mount Messages

Connect:Direct OS/390 supports the transmission of tape files. Connect:Direct implements separate and distinct messages to control tape management, providing the greatest flexibility to operators in managing tape transfers. The following sections describe the three Connect:Direct tape messages.

Tape Pre-mount Message

This optional message is issued prior to allocating a tape device. It tells you that Connect:Direct requires a specific volume on a specific device type. With this message, you can:

- ❖ Control the number of tape units available to Connect:Direct for tape transfers.
- ❖ Locate the volumes before the transfer occurs.

You are required to respond to this message when the required resources are available.

Tape Mount Messages

These messages are also optional. The first message (WTO) is in the format of the OS/390 mount message. The second message is issued as a WTOR to inform the operator to mount a specific volume on a specific device. The third message is issued only if TAPE.PRE MOUNT=LIST. Message SVST00C is displayed listing all volume-serial numbers of the requested file. If you are unable to satisfy the specific request, you can reply CANCEL to cancel the request. This message is also used to drive the visual display devices attached to 3480-type devices.

Note: If you use tape silos in your environment, see the information on the Tapemount Exit in Chapter 10, *Using Connect:Direct Exits* in the *Connect:Direct OS/390 Administration Guide*. To prevent the Connect:Direct environment from locking up due to an outstanding tape mount request, the Connect:Direct tapemount exit provides an interface to StorageTek Tape Silo Software to query the silo to determine that all VOLS required for a tape file are present.

Setting Up Connect:Direct OS/390 Tape Pre-mount Messages

To issue the Connect:Direct tape pre-mount messages, specify TAPE.PREMOUNT=YES|LIST in the Connect:Direct initialization parameter file. See the *Connect:Direct OS/390 Installation Guide* for details.

Setting Up Connect:Direct OS/390 Tape Mount Messages

Issue the Connect:Direct tape mount messages in place of the OS/390 mount message. The Connect:Direct mount messages consist of an OS/390-format mount message followed by a WTOR issued to the descriptor and route codes specified by the DESC.TAPE and ROUTCDE.TAPE.

You can suppress the Connect:Direct message by specifying ROUTCDE.TAPE=(0) in the initialization parameters. The defaults are DESC.TAPE=(2) ROUTCDE.TAPE=(5,11). If you suppress Connect:Direct tape mount messages, the standard OS/390 mount messages are issued with related serialization during mount processing.

If you specify ROUTCDE.TAPE=(0), causing Connect:Direct not to issue the mount messages, then the normal OS/390 mount message is issued when the dataset is opened. OS/390 mount processing holds an ENQ on the SYSZTIOT resource. This ENQ causes all other Connect:Direct Processes to hang at allocation, open, and deallocation until the tape is mounted.

If you use the Connect:Direct tape mount message, the tape already is on the tape drive at open time and OS/390 mount processing does not hold the SYSZTIOT resource.

Responding to Connect:Direct OS/390 Tape Pre-mount Messages

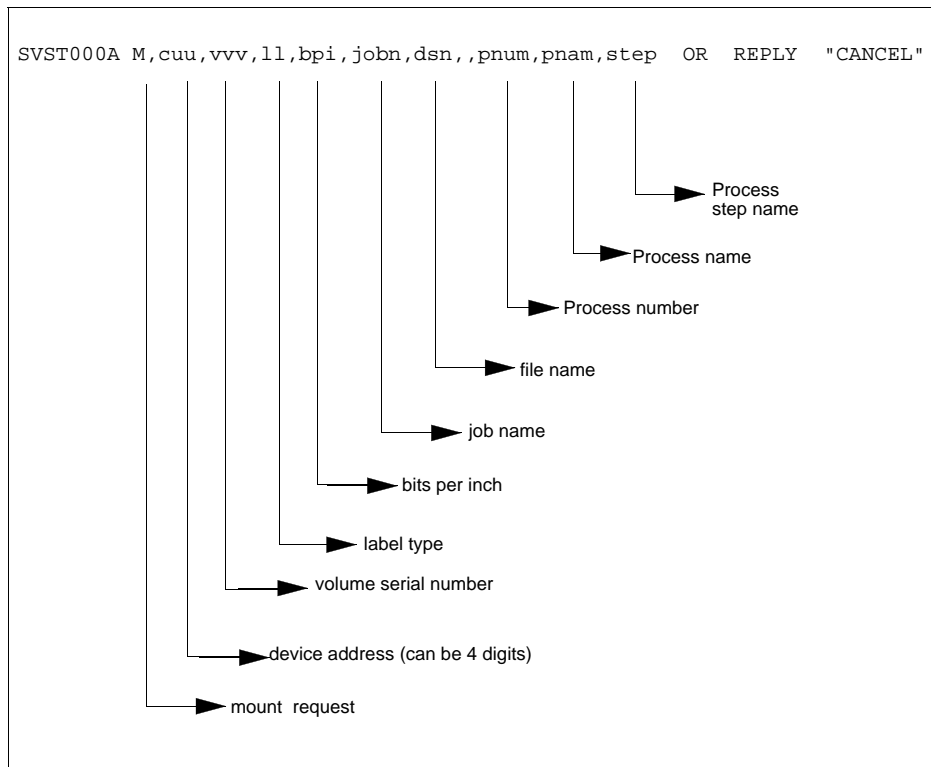
The following is the format of a Connect:Direct tape pre-mount message.

```
SVST000B - C:D REQUIRES VOL=SCRTCH TYPE=TAPE 6250/1600BPI  
REPLY "GO" WHEN READY
```

To continue processing, reply GO to the message. While this message is outstanding, no unit is allocated. However, the session for this transfer request remains active.

Responding to Connect:Direct OS/390 Tape Mount Messages

The following is the format of a Connect:Direct tape mount message issued during a specific tape request.



If no tape is available or if you want to end the copy, reply CANCEL to the tape mount message.

Tape Device Allocation

After the GO reply to a pre-mount message, and following the pre-mount processing, Connect:Direct allocates a tape device using Defer mounting. If an allocation error occurs, and the allocation error code is in the ALLOC.CODES parameter of the Connect:Direct initialization parameters, Connect:Direct retries the operation.

When device allocation completes successfully, Connect:Direct issues an OS/390-format Open mount message to allow tape management and visual display routines to process the request. The format of the message follows.

```
IEC501A M, cuu, volser, sl, , jobn, dsn, pnum, pnam, step
```

Following the IEC501A message, Connect:Direct issues a WTOR to allow you to mount the tape or cancel the request.

Terminating the Tape Mount

A COPY step within a Process requiring a tape to be mounted causes the tape mount message to display. You can terminate the COPY step with a CANCEL reply. Any other reply causes Connect:Direct to reissue the mount message.

If you are using both the tape pre-mount message and the tape mount message, and want to cancel the request, reply GO to the tape pre-mount (SVST000B) and CANCEL to the tape mount message (SVST000A). If you do not want to terminate the copy step, the mount message disappears when the tape is mounted.

Verifying Volume Requests

For standard label tapes, Connect:Direct OS/390 verifies the volume serial number for a specific volume request. If you mount the wrong volume, the following message is issued and the volume is dismounted.

```
SVST001I - D cuu,volser --- IS NOT THE REQUESTED VOLUME
```

You can mount the correct volume, or you can reply CANCEL to the reissued SVST000A mount message.

Handling Multivolume Files

The Connect:Direct OS/390 mount message is issued only for the first volume of a file, when a multivolume file is requested. Subsequent mount requests causes a SYSZTIOT enqueue during end-of-volume processing.

To keep Connect:Direct from long waits while a second or subsequent volume is mounted, use UNIT=(unit,P) or UNIT=(unit,n) for the UNIT keyword of the COPY statement. For a description of the COPY statement, see the Connect:Direct Processes Web site at

<http://www.sterlingcommerce.com/Documentation/processes/processhome.html>.

Connect:Direct OS/390 Messages on 3480 Display

The 3480 tape drive has an 8-character display. Connect:Direct issues messages to this display concerning tape processing in the following manner:

- ❖ When a tape is to be dismounted, the first character position of the display contains a **D**. Positions 2–7 consist of the tape's volume serial number. Position eight contains an **N** if the tape is nonlabeled or an **S** if the tape has standard labels.
- ❖ When a tape is to be mounted, the first character position of the display contains an **M**. Positions 2–7 consist of the tape's volume serial number. Position eight contains an **N** if the tape is nonlabeled or an **S** if the tape has standard labels.
- ❖ When a tape is loaded, the first character position of the display is blank. Positions 2–7 consist of the tape's volume serial number. Position eight contains an **N** if the tape is nonlabeled or an **S** if the tape has standard labels.

Connect:Direct for VM/ESA Tape-handling Procedures

This chapter describes tape-handling procedures for the Connect:Direct for VM/ESA product.

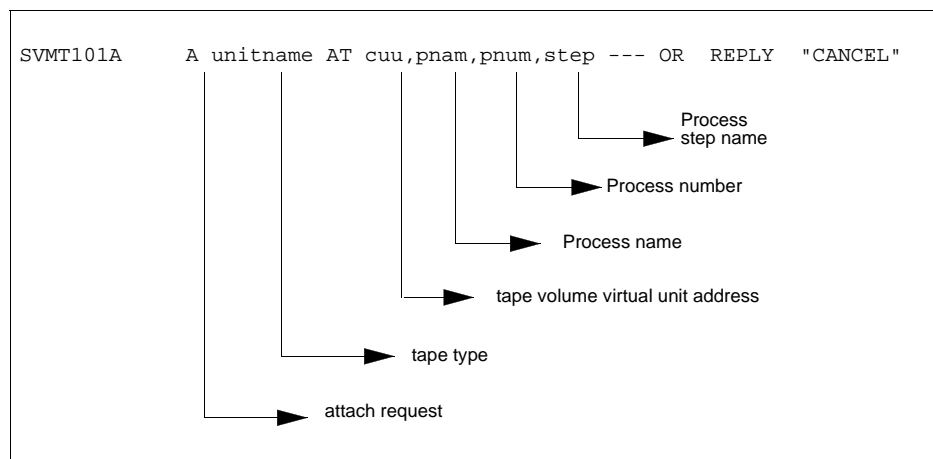
Attaching Tape Drives to Connect:Direct for VM/ESA

The Connect:Direct initialization parameter MAX.TAPE indicates the maximum number of tape drives (0–16) that you can attach to the virtual machine running Connect:Direct for VM/ESA. The default value is 16.

If you specify the Connect:Direct initialization parameter TAPE.DETACH=YES in the initialization parameter file, the tape drive used in a Process step is detached upon completion of that step. The default value for TAPE.DETACH is NO.

Understanding Connect:Direct for VM/ESA Attach Tape Drive Messages

Connect:Direct issues a message each time a tape drive must be attached to complete a COPY PROCESS step. A message is issued by Connect:Direct when you specify a COPY to or from tape, for example when UNIT=3480 is specified.



The preceding message indicates that you must attach a tape drive of the type *unitname* at the virtual address *cuu* of the virtual machine running Connect:Direct. Any response except CANCEL or RETRY causes Connect:Direct to continue the COPY PROCESS step.

You can wait for a Process using a tape drive to complete and type RETRY instead of attaching another tape drive to the virtual machine running Connect:Direct. RETRY causes Connect:Direct to recheck the availability of all attached tape drives.

If you type CANCEL to the attach tape drive message, the Connect:Direct Copy Process step is terminated.

No Tape Drive Specified

If you have not specified a tape drive, Connect:Direct for VM/ESA displays the following message.

```
SVMT101A - A bpi AT cuu,pnam,pnum,step --- OR REPLY "CANCEL" OR "RETRY"
```

The message indicates that you must attach a tape drive that supports the density specified by *bpi* at the virtual address *cuu* to the virtual machine running Connect:Direct.

After a tape drive is attached, any reply except CANCEL or RETRY causes Connect:Direct to continue the COPY PROCESS step.

You can wait for a Process using a tape drive to complete and reply RETRY, instead of attaching another tape drive to the virtual machine running Connect:Direct. RETRY causes Connect:Direct to recheck the availability of all attached tape drives.

If you reply CANCEL to the attach tape drive message, the Connect:Direct Copy Process step is terminated.

No Available Tape Drives

The following Connect:Direct for VM/ESA attach tape drive message is displayed when no tape drives are available.

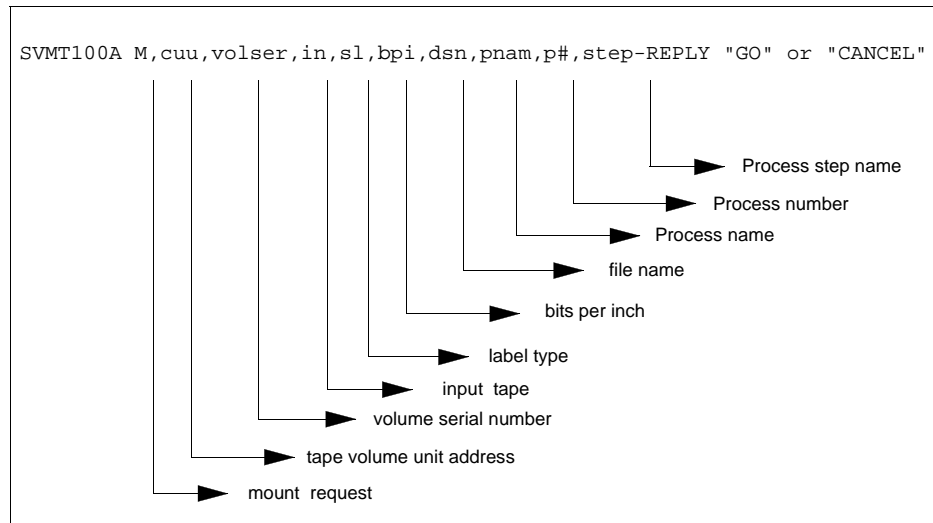
```
SVMT122A - ALL TAPEDRIVES IN USE,pnam,pnum,step - REPLY "CANCEL" OR "RETRY"
```

Tape drives are unavailable when a Connect:Direct COPY PROCESS step is running. The maximum tape drives defined by the Connect:Direct initialization parameter MAX.TAPE is met.

If you type CANCEL, the Copy Process step is terminated. RETRY causes Connect:Direct to recheck the availability of all tape drives attached to the virtual machine running Connect:Direct.

Responding to Connect:Direct for VM/ESA Tape Mount Messages

Because open processing under VM does not provide for tape volume mount requests, Connect:Direct for VM/ESA must do so. The following example shows the format of the tape mount request that Connect:Direct for VM/ESA issues for each volume that is needed.



Note: If you mount a tape after you see the Connect:Direct mount message, Connect:Direct continues processing as if you had replied GO.

Terminating the Tape Mount

To terminate a tape mount request, type CANCEL. The COPY PROCESS step is terminated. If you type any other reply, Connect:Direct attempts to open and process the tape file.

Verifying Volume Requests

This section describes tape volume requests for standard labeled and nonlabeled tapes.

Standard Labeled Tapes

Connect:Direct for VM/ESA reads the VOL1 label for standard labeled tapes. If Connect:Direct for VM/ESA discovers that the wrong tape volume is mounted, an error message is sent to the console, and the mount message is reissued.

Standard labeled tapes contain expiration dates in the HDR1 label. Connect:Direct verifies that standard labeled tapes have expired before overwriting them.

One of the three following messages is issued for standard labeled tapes:

- ❖ If the tape is specified as an output tape, and its expiration date is not yet reached:

```
SVMT107A - cuu,volser,pnam,pnum,step TAPE HAS NOT EXPIRED YET --- REPLY "GO" TO
OVERWRITE
```

- ❖ To overwrite the standard labeled tape, reply GO. Any other reply causes Connect:Direct to re-display the mount message.
- ❖ If a nonlabeled tape is mounted for a standard labeled, scratch-output tape:

```
SVMT120A - cuu,pnam,pnum,step NL TAPE BUT SL OUTPUT REQUEST --- REPLY "INIT" TO
INITIALIZE TAPE OR "CANCEL"
```

- ❖ If you reply INIT to initialize the tape:

```
SVMT121A - cuu,pnam,pnum,step REPLY W/VOLSER FOR TAPE INITIALIZATION OR "CANCEL"
```

Non-Specific Request

If you make a nonspecific request for a tape, the mount message contains SCRTCH in the VOLSER field. Mount any available scratch tape of the requested label type for use by Connect:Direct for VM/ESA.

Non-Labeled Tape Request

Connect:Direct for VM/ESA issues several messages for nonlabeled tape requests:

- ❖ When VOLSER is specified, the following message is issued.

```
SVMT100A - M 180,TVOL01,IN,NL,1600 BPI,dsn,pnam,pnum,step --- REPLY "GO" or
"CANCEL"
```

This message is issued when the VOLSER is specified in the Process. Mount the tape and reply to the message.

Note: You must specify the VOLSER for input files.

- ❖ When VOLSER is not specified, the following message is issued.

```
SVMT100A - M 180,SCRATCH,OUT,NL,1600 BPI,dsn,pnam,pnum,step
--- REPLY W/VOLSER OR "CANCEL"
```

Type the VOLSER of the scratch tape that is mounted.

- ❖ After the VOLSER is typed the following message is issued.

```
SVMT110A - 180,pnam,pnum,step,VOLSER=xxxxxx --- REENTER FOR
VERIFICATION
```

In this message, *xxxxxx* is the VOLSER from the previous message. Retype the VOLSER of the mounted tape. This process enables you to verify that the correct nonlabeled tape is mounted. The VOLSER you type is compared with the VOLSER from the previous message. If they do not match, an error message is issued and the mount message is reissued.

- ❖ If you mount a standard-labeled tape when a nonlabeled output tape is requested, the following message is issued.

```
SVMT113A - cuu,volser,pnam,pnum,step SL TAPE BUT NL OUTPUT
REQUEST --- REPLY "GO" TO OVERWRITE
```

Type GO to continue processing the COPY step and to overwrite the mounted tape. Any other reply causes Connect:Direct to display the mount message again.

Specifying Peek Mode

If PEEK is the reply to any Connect:Direct for VM/ESA mount message, a special mode called PEEK is typed. Commands are available in the PEEK mode that allow diagnostic checkpointing of the tape or tape drive, or both.

If you specify PEEK, Connect:Direct displays the following message.

```
SVMT124A - PEEK ENTER CMD:
```

The available peek commands and their uses are:

Command	Description
BSB n	Backs up the mounted tape a certain number of blocks. Type BSB n , where n is the number of blocks. The default is 1. BSB specifies backward space block.
BSF n	Backs up the mounted tape a certain number of files. Type BSF n , where n is the number of blocks. The default is 1. BSF specifies backward space file.
FSB n	Moves the mounted tape forward a certain number of blocks. Type FSB n , where n is the number of blocks. The default is 1. FSB specifies forward space block. Note: This command can cause the tape to run past the end of the reel.
FSF n	Moves the mounted tape forward a certain number of files. Type FSF n , where n is the number of files. The default is 1. FSF specifies forward space file. Note: This command can cause the tape to run past the end of the reel.

Command	Description
R n	Reads the mounted tape for a certain number of blocks. Type R n , where n is the number of blocks. The default is 1 . Data is displayed in both hexadecimal and character form. R specifies read. Note: This command can cause the tape to run past the end of the reel.
LEN n	Sets the number of bytes to be displayed for each block read during the read command. Type LEN n , where n is the number of bytes. If no number is typed, the previously specified number is the default. The LEN number is initialized to 256 by Connect:Direct. LEN specifies length.
REW	Rewinds the mounted tape to its load point. REW specifies rewind.
RUN	Rewinds and unloads the mounted tape. RUN specifies rewind and unload.
SENSE	Retrieves the sense information from the tape drive where the tape is, or is mounted. The interrupt control block created by the GENIO command is displayed and 24 sense bytes are displayed. The format of the interrupt control block is as follows: <ul style="list-style-type: none"> • Offset +00 - the flag byte • Offset +04 - the device address • Offset +08 - the channel status word • Offset +16 - the 24 sense bytes Some interpretation of the retrieved sense bytes occurs. If the tape drive is not ready, the following message is displayed: TAPEUNIT cuu NOT READY If the tape mounted is write-protected, the following message is displayed: TAPEUNIT cuu HAS WRITE PROTECTED TAPE If the tape mounted is at its load point, the following message is displayed: TAPEUNIT cuu HAS TAPE AT LOAD POINT
QUIT	Exits the PEEK mode and displays the mount message again.

Interpreting Tape I/O Errors

If an error occurs during the COPY PROCESS step, a return code and message ID is displayed. Check the Connect:Direct for VM/ESA message facility to determine the type of error. One of the following is true if it is a tape I/O error:

- ❖ If the return code starts with a 0 bit, the channel program terminated with a permanent error. The last two bytes of the return code contain the unit and channel status bytes, respectively, from the channel status word.
- ❖ If the return code starts with a 1 bit, a GENIO START function failed. The last two bytes of the Connect:Direct return code contain the GENIO START function return code. The following table lists the GENIO START function return codes and their meanings.

Return Code	Meaning
4	This virtual machine is not authorized for real I/O.
8	The specified I/O device is not open.
12	The specified I/O device is busy.
16	The channel command word (CCW) address is not specified.
20	Cannot perform real I/O functions when in KEY 0.

Return Code	Meaning
24	A real I/O device is required for the STARTT function.

If tape I/O errors occur frequently, you can obtain diagnostic information by putting a FILEDEF for ESTAE in the PROFILE GCS for the Connect:Direct DTF virtual machine. For generic errors that occur with tape processing, you can enable the Connect:Direct tape handling trace, as documented in the *Connect:Direct Problem Isolation Guide*.

Connect:Direct for VM/ESA Messages on 3480 Display

The 3480 tape drive has an 8-character display. Connect:Direct issues messages to this display concerning tape processing in the following manner.

When a tape is to be dismounted, the first character position of the display contains a **D**. Positions 2–7 consist of the volume serial number of the tape. Position eight contains an **N** if the tape is nonlabeled or an **S** if the tape has standard labels.

When a tape is to be mounted, the first character position of the display contains an **M**. Positions 2–7 consist of the volume serial number of the tape. Position eight contains an **N** if the tape is nonlabeled or an **S** if the tape has standard labels.

When a tape is loaded, the first character position of the display is blank. Positions 2–7 consist of the volume serial number of the tape. Position eight contains an **N** if the tape is nonlabeled or an **S** if the tape has standard labels.

VMTAPE Exit

Connect:Direct for VM/ESA provides an exit that supports processing by the Sterling Commerce tape management software product VMTAPE.

The exit point is added in order to provide more flexibility in the handling of tapes by Connect:Direct, and to enable you or Connect:Direct module to be called whenever a tape is to be mounted or de-mounted.

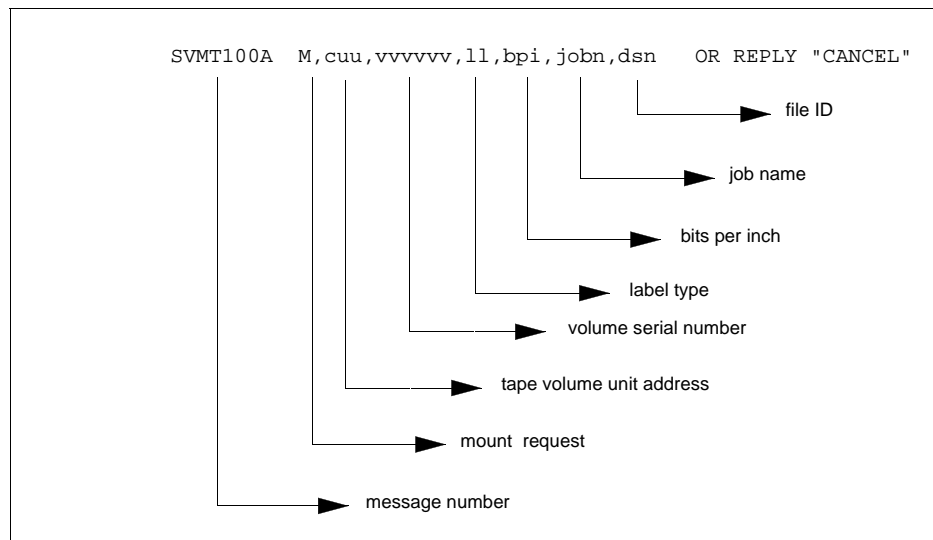
The VMTAPE exit, associated Connect:Direct initialization parameters, relationship with the VMTAPE CONFIG file, and the MEXCB control block parameters are described in greater detail in the *Connect:Direct for VM/ESA Installation Guide*.

Connect:Direct for VSE/ESA Tape-handling Procedures

This chapter describes tape-handling procedures for the Connect:Direct for VSE/ESA product.

Responding to Connect:Direct for VSE/ESA Tape Mount Messages

Because open processing under VSE does not provide for tape volume mount requests, Connect:Direct for VSE/ESA must do so. Connect:Direct issues the following tape mount request for each required volume.



Terminating the Tape Mount

If you do not want to honor the mount request, reply id CANCEL and the COPY PROCESS step is terminated. Connect:Direct for VSE/ESA attempts to open and process the tape file if any other reply is typed.

Verifying Volume Requests

The following sections describe how to verify volume requests for standard labeled, nonspecific, or nonlabeled tape requests.

Standard Labeled Tapes

Connect:Direct for VSE/ESA reads the VOL1 label for standard labeled tapes. If Connect:Direct discovers that the wrong tape volume has been mounted, an error message is sent to the console, and the mount message is reissued.

Nonspecific Request

If you make a nonspecific request for a tape, then the mount message contains SCRTCH in the VOLSER field. You can mount any available scratch tape for use by Connect:Direct for VSE/ESA.

Nonlabeled Tape Request

One of two mount messages is issued for nonlabeled tape requests:

- ❖ When VOLSER is known you see the following.

```
SVST000A M 180 ,NLTAPE ,NL ,1600 BPI ,NDMJOB ,TEST.FILE --- OR REPLY CANCEL
```

This message is issued when the VOLSER is already known. You only have to mount the tape and reply to the message.

- ❖ When VOLSER is not known you see the following.

```
SVST000A M 180 ,SCRTCH ,NL ,1600 BPI ,NDMJOB ,TEST.FILE ---  
REPLY W/VOLSER OR CANCEL
```

When this message is issued, you must type the VOLSER of the scratch tape that has been mounted.

After the VOLSER is mounted you see the following.

```
SVST0131 VOLSER=XXXXXX REENTER FOR VERIFICATION
```

In this example, `xxxxxxx` is the VOLSER from the previous message.

Retype the VOLSER of the mounted tape here. This process provides a second chance to ensure that the correct nonlabeled tape has been mounted. The VOLSER typed at this point is compared to the VOLSER from the previous message. If the VOLSERs do not match, an error message is issued and the mount message is reissued. Otherwise, processing continues.

Note: For additional information regarding tape messages, refer to *Responding to Messages* on page 31.

Part III

Log Printer Procedures

Connect:Direct Log Printer Procedures

This chapter describes Log Printer procedures for Connect:Direct.

Possible Printer Errors and Resolution

You can log Connect:Direct messages to a specified printer, and a console, through the use of an LU1 printer interface. You can handle printer errors without stopping Connect:Direct. Possible errors are:

- ❖ Printer jams
- ❖ No printer paper
- ❖ Power loss
- ❖ Disconnected printer

When a printer error is detected, a message is sent to the console. Connect:Direct discontinues logging to the log printer until the problem is corrected and the printer is reactivated.

If you provide a valid LU1 printer name in the initialization parameters at Connect:Direct initialization, the LU1 printer is automatically activated when the first Connect:Direct log message is written.

You can perform the following printer functions by issuing the Connect:Direct MODIFY command from the Operator Interface:

- ❖ Deactivate a currently active printer.
- ❖ Activate a currently inactive printer.
- ❖ Specify the printer name if no LU1 printer name is specified in the initialization parameters. The currently inactive printer is also activated.
- ❖ Deactivate the currently active printer and activate the new printer name by specifying the name of a printer that is different from the one specified in the initialization parameters.

For instructions on how to specify an LU1 printer name in the initialization parameters, see the appropriate Connect:Direct manuals for your operating system.

Connect:Direct Log Printer Commands

The Connect:Direct MODIFY command enables you to deactivate and reactivate the LU1 printer. Issue this command through the Operator Interface or through the IUI.

Connect:Direct OS/390 Command Format

Connect:Direct OS/390 uses the following command format:

```
MODIFY jobname ,LOG.PRINTER=OFF|ON|luname
```

The following table describes the parameters for this command.

Parameter	Description
OFF	deactivates the currently active printer.
ON	activates the currently inactive printer (specified in the initialization parameters or in a previous MODIFY command).
luname	causes the specified printer to be activated. If a printer is already active, the printer is first deactivated. This parameter replaces the <i>luname</i> specified in the initialization parameter.

Connect:Direct for VM/ESA Command Format

For Connect:Direct for VM/ESA the command format follows.

```
R id CMD MODIFY LOG.PRINTER=OFF|ON|luname
```

In the Connect:Direct for VM/ESA example, R is the REPLY command; id is the Operator Interface REPLY ID; and CMD is for the command CLIST.

Connect:Direct for VSE/ESA Command Format

For Connect:Direct for VSE/ESA the command format follows. The format is the same as for Connect:Direct OS/390 except that the command is preceded by the reply identifier, id.

```
id MODIFY LOG.PRINTER=OFF|ON|luname
```

Examples

The following examples show the command format. To use the commands, submit a CLIST containing commands. For more information on submitting Connect:Direct commands using the Operator Interface, refer to Part I, *Using the Operator Interface*. In these examples, the CLIST called CMD will be executed. The jobname of the DTF is CDDTF.

Each of the following commands activates LU1 printer support.

Type the following command for Connect:Direct OS/390.

```
F CDDTF,CMD MODIFY LOG.PRINTER=ON
```

Type the following command for Connect:Direct for VM/ESA.

```
REPLY id CMD MODIFY LOG.PRINTER=ON
```

Type the following command for Connect:Direct for VSE/ESA.

```
id MODIFY LOG.PRINTER=ON
```


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