Entire Net-Work Operator Commands

This section describes the Entire Net-Work operator commands. It covers the following topics:

- Overview
- Operator Commands Summary
- Operator Command Descriptions

Overview

Although Entire Net-Work operates automatically, there are operator commands available to display or modify the status of the network and control the local Entire Net-Work node.

The Entire Net-Work commands described in this section are similar to Adabas operator commands. A summary and description of the operator commands for z/OS are provided.

The Entire Net-WorkTCPX line driver has the ability to process operator commands that are directed to a specific link or directly to the driver. For more information about TCPX line driver operator commands, read *TCPX Operator Commands*.

Operator Commands Summary

The following table summarizes the Entire Net-Work operator commands for z/OS:

Command	Argument	Action
ADAEND		Terminate Entire Net-Work session.
CLOSE	driver	Disconnect all links of a driver, then close the driver.
CLOSE NETPRNT		Close the NETPRNT file and route all trace and snap output to DDPRINT.
CONNECT	link	(Re-) connect a link after a disconnect or handshake error.
DEFINE	link	Dynamically define a new link.
DISABLE	link	Disable a link (link cannot accept connects).
DISCONNECT	link	Disconnect a link.
DISPLAY	parameter	Display link, nodes, targets, paths or statistics.
DUMP		Snap data areas, then terminate the Entire Net-Work session.
ENABLE	link	Enable a link (the link can accept connects).
END		Terminate Entire Net-Work session.
FORCE	node	Broadcast a "node down" message.
HALT		Terminate Entire Net-Work session.
HELP		List available operator commands.
NETEND		Terminate Entire Net-Work session.
OPEN	driver	Reopen a driver after a close or access method failure.
OPEN NETPRNT		Open the NETPRNT file and route all trace and snap output to the NETPRNT file.
PROBE	node	Send a probe message to a node.
RESUME	link	Resume sending messages via this link.
SET	parameter	Change the values of Entire Net-Work parameters. Note: The minimum abbreviation for SET is the null string (zero characters long).
SNAP		Snap data areas to DDPRINT.
START	driver	(Re-) start driver (then connect all links of driver).
STOP		Terminate Entire Net-Work session.
SUSPEND	link	Stop sending messages on this link.
TERMINATE		Terminate Entire Net-Work session.

Operator Command Descriptions

This section describes each of the operator commands in detail. The underlined portion of the command is the minimum abbreviation.

```
ADAEND
END
HALT
NETEND
STOP
TERMINATE
```

Any one of the above commands can be used to terminate an Entire Net-Work session normally. The STOP operator command (for example, STOP taskid or P taskid) can be used in z/OS environments.

A check is made for any additional parameters. If one is found, the command is rejected and message NET0115 is issued. Thus, erroneous commands are rejected and an accidental termination of Entire Net-Work is avoided.

Once the termination command has been accepted by Entire Net-Work, no more requests are selected from the request queue. Message NET0999 is displayed on the operator console confirming that normal termination procedures have been started.

Note:
The DUMP command also ends Entire Net-Work operation after performing a snap dump of pertinent data areas.

```
CLOSE   driver
```

Terminate all activities of the driver by disconnecting and closing all links related to the driver, then closing the driver itself.

The effect of this command can be reversed by issuing the OPEN or START command for the driver, and CONNECT commands for the links (as appropriate).

```
CLOSE   NETPRNT
```

Close the NETPRNT file and route all trace and snap output to the DDPRINT file. When the NETPRNT file is closed, the data set can be copied for sending to Software AG support, without shutting down Entire Net-Work. The file must be allocated SHR. This command cannot be abbreviated.

```
CONNECT   linkname
```

Attempt to connect link linkname. The link name specified must match that used on the LINK statement. If the link was disconnected after a "handshaking" conflict, the CONNECT command can be used to retry the procedure. If the link is disabled, the CONNECT command can be used to enable it.

```
DEFINE   LINK   linkname={ link statement | LIKE linkname }
```

Define a link during Entire Net-Work operation. The link statement must adhere to the format described in the section about the related line driver.

The LIKE linkname parameter can be used instead of the link statement to define a link by copying the parameters specified for a previously-defined link. For example:

```
DEFINE LINK TOPSYS LIKE BOTSYS
```

Note:
DEFINE LINK, is permitted only if DEFINE=Y is specified on the NODE statement

```
DISABLE  linkname
```

Instructs the specified link not to accept any connections from other Entire Net-Work nodes. If the link is connected, it is disconnected and then disabled.

```
DISCONNECT   linkname
```

Disconnect the specified link, which is connected to this node. The link name specified must be the same as that used on the LINK statement.

```
DISPLAY  { ALINKS | CSCI | LINKS | NODES | PATHS | STATS | TARGETS | ZAPS }
                 [ {name | string* } ]
```

Displays current information about the specified network component. Only one component type (link, node, path, or target) can be specified in a single DISPLAY command. The information is displayed in the form of Entire Net-Work messages. For more information, see the section *Messages and Codes*.

The optional second parameter serves to qualify the display request, thereby limiting the information displayed. At the same time, additional information is displayed for qualified DISPLAY LINK or DISPLAY NODES requests.

The possible qualifier values and their meanings depend on the type of request. A link name, node name, or (numeric) target ID may be specified. Alternatively, a string ending in a "wild card" character (*) may be used to indicate all links or nodes whose names start with the specified string. The asterisk (*) alone may be used to produce a display of all links or nodes, but additional information is shown only for qualified display requests.

The following is an example of DISPLAY CSCI output:

```
F NETWK,D C
NETQ002I:  Csi Server  -ESG111- Act Targ(00039) Srv(00013)
NETQ002I:  Csi Server  ESQSRV   Act Targ(00039) Srv(00012)
NETQ002I:  Csi Server  TESTNAT  Act Targ(01001) Srv(00011)
NETQ002I:  Csi Server  KSPS2    Act Targ(01001) Srv(00010)
NETQ002I:  Csi Server  KSPS1    Act Targ(01001) Srv(00009)
NETQ002I:  Csi Server  -DAEKCO- Act Targ(01014) Srv(00008)
NETQ002I:  Csi Server  KCOSRV4  Act Targ(01014) Srv(00007)
NETQ004I:  Registered Servers Display Function Complete
```

The following is an example of DISPLAY NODES output:

```
F NETWK,D N
NET0122I: NODE FNODE     (50752) LOCAL
NET0122I: NODE ALSNODE   (54080) DIST 000040 VIA LINK LNKE
NET0122I: NODE ANODE     (49472) DIST 000020 VIA LINK LNKA
NET0122I: NODE ENODE     (50496) DIST 000020 VIA LINK LNKE
```

A qualifier is used in the following example:

```
F NETWK,D N A*
NET0122I: NODE ALSNODE   (54080) DIST 000040 VIA LINK LNKE
NET0123I: TARGETS: 00025 00171 00194 00175 00173 00018 00009
NET0123I: TARGETS: 00177
NET0122I: NODE ANODE     (49472) DIST 000020 VIA LINK LNKA
NET0123I: TARGETS: 00125 00192
```

The following is an example of DISPLAY TARGETS output:

```
F NETWK,D T
NET0124I: TARGET 09777 (C-N) ACTIVE ON NODE ALSNODE
NET0124I: TARGET 00009 (I-T) ACTIVE ON NODE ALSNODE
NET0124I: TARGET 02048 (L-N) ACTIVE ON NODE ANODE
NET0124I: TARGET 00237 (I-N) ACTIVE ON NODE ANODE
NET0124I: TARGET 00238 (I-N) ACTIVE ON NODE ANODE
NET0124I: TARGET 09888 (C-N) ACTIVE ON NODE ANODE
NET0124I: TARGET 00234 (I-N) ACTIVE ON NODE ANODE
NET0124I: TARGET 55769 (C-N) ACTIVE ON NODE ANODE
```

The following is an example of DISPLAY PATHS output:

```
F NETWK,D P
NET0122I: NODE ALSNODE  (54080) DIST 000080 (001) VIA LINK LNKA
NET0122I: NODE ALSNODE  (54080) DIST 000040 (002) VIA LINK LNKE
NET0122I: NODE ANODE    (49472) DIST 000020 (001) VIA LINK LNKA
NET0122I: NODE ANODE    (49472) DIST 000040 (002) VIA LINK LNKE
NET0122I: NODE ENODE    (50496) DIST 000040 (002) VIA LINK LNKA
NET0122I: NODE ENODE    (50496) DIST 000020 (001) VIA LINK LNKE
```

The DISPLAY STATS command produces the same type of information found in the statistics displayed at the end of an Entire Net-Work session. A qualifier parameter, if given, would have no effect. The buffer usage statistics displayed depend on the operating system being used.

The following is an example of DISPLAY STATS output for a GCS/CMS system:

```
F NETWK,D STATS
NET0090I: BUFFER USAGE STATISTICS:
NET0091I: ASYNCH. BUFFERS:     000016 (= 24.2 %) OF 000064 K USED
NET0091I: LONG TERM BUFFERS:   000000 (=  0.4 %) OF 000064 K USED
NET0091I: SHORT TERM BUFFERS:  000000 (=  6.1 %) OF 001025 K USED
NET0091I: ATTACHED BUFFERS:    000000 (= 11.9 %) OF 000080 K USED
NET0091I: REQUEST QUEUE:       000000 (=  6.0 %) OF 000050 RQES USED
NET0087I: 0000010847 REQUESTS FROM LOCAL RQ
```

The following is an example of DISPLAY STATS output for a z/OS system. It includes a NETB001I and a NETB009I for each active buffer pool, a set of NETB008I, NETB010I, and NETB012I for each subpool within the buffer pools, and a NETB013I for each operator command issued.

```
F NETWK,D STATS
NETB000I: ------------------------------------------------------------
NETB001I:        Statistics For Buffer Pool COMN Loc = ANY
NETB000I: ------------------------------------------------------------
NETB008I: Req =(      13,     0,    10,     0)
NETB010I: ELM =(     512,   512,   512,   512), Sz = 512 B
NETB011I: Str =(     256,   256,   254,   252 ) K
NETB012I: Exp =(       0,     1,     0,     0)
NETB000I: ------------------------------------------------------------
NETB008I: Req =(       1,     0,     0,     0)
NETB010I: Elm =(      10,    10,    10,     2), Sz =   1 K
NETB011I: Str =(      15,    15,    13,    13) K
NETB012I: Exp =(       0,     1,     0,     0)
NETB000I: ------------------------------------------------------------
NETB008I: Req =(       1,     0,     0,     0)
NETB010I: Elm =(       1,     1,     1,     1), Sz =  14K
NETB011I: Str =(      14,    14,     0,     0) K
NETB012I: Exp =(       0,     1,     0,     0)
NETB000I: ------------------------------------------------------------
NETB009I: High Allc=   285  Curr Allc =   285   Curr Avail =   267 K
NETB000I: ------------------------------------------------------------
NETB001I:       Statistics For Buffer Pool PGFX Loc = ANY
NETB000I: ------------------------------------------------------------
NETB008I: Req =(       0,      0,      0,    0)
NETB010I: Elm =(      64,     64,     64,    0), Sz =  4K
NETB011I: Str =(     256,    256,    256,  256) K
NETB012I: Exp =(       0,      0,      0,    0)
NETB000I: ------------------------------------------------------------
NETB009I: High Allc=  256  Curr Allc =   256   Curr Avail =   256 K
NETB000I: ------------------------------------------------------------
NETB013I: Combined Buffer Pools Size                    541 K
NETB000I: ------------------------------------------------------------
```

The DISPLAY ZAPS command lists, for each Entire Net-Work module, its name, assembly date, system maintenance level, and zap level. If zaps were applied after initial shipment, their numbers are listed as "Additional Zaps". The following is an excerpt from a DISPLAY ZAPS example:

```
F NETWK,D Z
NET0037I: NETCLF (1998/11/10 SM=0001) ZAP LEVEL 0000
```

DUMP

Issue a snap dump, then end the Entire Net-Work session. DUMP is equivalent to the SNAP command followed by an ADAEND (or synonymous) command.

```
ENABLE  linkname
```

Revokes a previously entered DISABLE command. The specified link is instructed to accept incoming connect requests. Enabling a disconnected link does not connect the link.

```
FORCE  { nodename | nodeid }
```

Broadcasts a control message through the network to notify all Entire Net-Work nodes that the specified node is no longer available. This command is provided for diagnosis and exception handling, and should be used only on the advice of your Software AG technical support representative.

```
HELP
```

Lists the available Entire Net-Work operator commands with a short explanation of their function.

```
OPEN  driver
```

Reopen an installed/defined line driver that was stopped due to an access method or other network or system failure, or by the CLOSE operator command. The driver name must be the same as that specified on a DRIVER statement. Note that this command is currently a synonym for the START command. For further information, see the explanation of the START command.

```
OPEN   NETPRNT
```

Open the NETPRNT file and route all trace and snap output to NETPRNT. This command is necessary only after a CLOSE NETPRNT command has been used. It opens the NETPRNT file when Entire Net-Work is initialized. If the file is allocated SHR or OLD it will be erased when opened. This command cannot be abbreviated.

```
PROBE  { nodename | nodeid } [ nnnn ]
```

The PROBE command verifies that the specified node is available and can be reached. Entire Net-Work issues internal probe commands for the same purpose during normal operation. PROBE routes an internal message to the specified node and back. If the node cannot be reached, this information is sent to all active nodes, updating the node status.

The optional second parameter specifies that nnnn bytes of random user data (64512 bytes maximum) are to be appended to the actual probe message. The exact length of the message sent can be calculated as follows:

```
70 + (nodestack size) + nnnn
```

where nodestack size is twice the number specified by the NODE statement parameter MAXPATH=, rounded up to the next multiple of 4. For example, with MAXPATH=4 (the default value) the following command results in a message of length 1078:

```
PROBE nodename 1000
```

The result of the operation is displayed on the operator console, as shown in the following example:

```
F NET1,PROBE TWO
NET0136I: PROBE MESSAGE SENT
NET0135I: PROBE FOR NODE TWO      (0001.711 SEC)
NET0120I: NODE TWO      (62194) DIST 000030 VIA LINK TOFIVE
NET0140I: VERSION v.r.s (1999/11/10)
```

```
RESUME  linkname
```

Revokes a SUSPEND command for the specified link. The link’s status changes to "active" and the link resumes sending queued messages.

```
SET  parameter=value, [ ... ]
```

The SET command can be used to change Entire Net-Work parameter settings dynamically without interrupting network operations. The SET command itself may be omitted.

Multiple parameters can be specified with one SET command.

For example, the following:

```
F NODEA,SET  CQTIMER=180, TRACE=OFF
```

is equivalent to

```
F NODEA,CQTIMER=180, TRACE=OFF
```

The parameters allowed for the SET command are a subset of those defined on the Entire Net-Work NODE statement. They are:

```
SET CQTIMER=secs
```

The approximate waiting time allowed for a user or application to retrieve command results with a router-16-call before timeout occurs. For more information, see the CQTIMER parameter.

```
SET DUMP={ ALL | NONE | BLOCKS | TRACETAB | BUFFERS | LINKAREA | FORMAT }
```

Sets the storage areas to be included in a dump when Entire Net-Work terminates abnormally. The information is printed to the NETPRNT file if it is open. Otherwise, it is printed to the DDPRINT file. SET DUMP can be used to reduce the amount of output generated during an abend, especially on large Entire Net-Work systems. This command cannot be abbreviated.

In general, the default value of ALL should be used so that all diagnostic information is available to Software AG support.

Multiple values can be specified, separated by commas and surrounded by parentheses. For example:

```
SET DUMP=(BLOCKS, TRACETAB, FORMAT)
```

If conflicting values are specified, the last value specified is used. In the following, for example, the value used is NONE:

```
SET DUMP=(BLOCKS, TRACETAB, NONE)
```

Value	Description
ALL	All storage areas are dumped. This is the default value.
NONE	No storage areas are dumped.
BLOCKS	The major control blocks are dumped.
TRACETAB	The internal trace table is dumped.
BUFFERS	All internal buffer areas are dumped.
LINKAREA	All storage areas related to a driver and link are dumped.
FORMAT	The driver and link trace tables are formatted.

```
SET LOG={ ON | OFF | YES | NO | FULL | SHORT }
```

Regulates control flow and logging of selected data areas to the printer data set. For more information, see the LOG parameter.

```
SET  MAXPATH=linkcount
```

Sets the maximum path link, specified in number of links, that a message from users on this node is expected to travel. For more information, see the MAXPATH parameter.

```
SET  MSGFORM=message-format
```

Sets the message format of console messages and DDPRINT output. For more information, see the MSGFORM parameter.

```
SET  PASSWORD=password
```

Sets the password that controls access to the Programmable Command Interface (PCI). For more information, see the PASSWORD parameter.

Note:
For security reasons, this command is accepted only through the Programmable Command Interface.

```
SET  REMCMD={ N | Y }
```

Allow or disallow remote access to the Programmable Command Interface. For more information, see the REMCMD parameter.

```
SET  REPLYTIM=secs
```

Sets the time, in seconds, that this node is to wait for a reply to a user request before timing out. For more information, see the REPLYTIM parameter.

```
SET  { TRACE | TROFF | TRON }={ trace | (trace,...) }
```

Sets the trace control parameters for performing program traces. For more information, see the TRACE parameters.

```
SET  UCMSC={ N | Y }
```

Controls whether messages are issued in upper case or mixed case. For more information, see the UCMSG parameter.

```
SET  ULINK={ N | Y }
```

Allows or disallows multiple links to an adjacent Entire Net-Work node. For more information, see the ULINK parameter.

```
SNAP  { BPH | CQ | CURRMSG |  MAIN  | MYBLK |  TRACE |  UBQ }
```

Issue a snap dump of selected data areas to the DDPRINT file and continue processing. (Under certain circumstances, a snap dump is performed internally at either normal or abnormal session end.)

The optional parameters are used to snap one or more specific data areas:

Parameter	Area
BPH	Buffer pool headers.
CQ	Command queue.
CURRMSG	Message that Entire Net-Work mainline is currently working on.
MAIN	Header of mainline module.
MYBLK	Central control block.
TRACE	Internal trace table.
UBQ	UB-Queue (currently active Adabas commands).

```
START  drivername
```

Restart an installed line driver that was stopped due to an access method or other network or system failure, or by the CLOSE operator command. The driver name must be the same as that specified on a DRIVER statement. The START command is a synonym for the OPEN command.

```
SUSPEND  linkname
```

Instructs the specified link to not send any more messages. However, Entire Net-Work can still queue messages on this link. The SUSPEND command is valid only if the link is active.