

# TCPX DRIVER Statement

The TCPX DRIVER statement and its parameters are used to activate and define the characteristics of the local IBM mainframe node. The access method name TCPX instructs Entire Net-Work to load the line driver module NETTCPX.

In most cases, only one DRIVER statement needs to be coded in your Entire Net-Work startup parameters. However, multiple DRIVER statements can be defined to allow Entire Net-Work to listen on multiple ports.

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## DRIVER Statement Format

The TCPX DRIVER statement has the following format:

```

DRIVER TCPX [ACCEPTUI = { N | Y } ]
             API = { OES | HPS }
             [APITRACE = ( N | Y, N | Y, N | Y, N | Y, N | Y, N | Y, N | Y, N | Y ) ]
             [CONNQUE = { n | 10 } ]
             [DRVCHAR = { character | # } ]
             [DRVNAME = { driver-name | TCPX } ]
             [KEEPALIV = { Y | N } ]
             [MULTSESS = { N | Y } ]
             [NUMUSERS = { number | 100 } ]
             [OPTIONS1 = ( n, n, n, n, n, n, n, n, n ) ]
             [OPTIONS2 = ( x, x, x, x, x ) ]
             [PSTATS = { Y | N } ]
             [RESTART = { interval, retries } ]
             [RSTATS = { Y | N } ]
             [SERVERID = { n | 1996 } ]
             [STATINT = { stat-interval | 3600 } ]
             [SUBSYS = { subsys-name | VMCF } ]
             [TRACE = { Y | N } ]
             [TRACELEV = ( N | Y, N | Y, N | Y, N | Y, N | Y, N | Y, N | Y, N | Y ) ]
             [TRACESIZ = { size | 4096 } ]
             [USERID = { userid | TCPIP } ]

```

For more information about syntax conventions and rules used in this section, read *Conventions*.

## Modifying the DRIVER Statement Parameters

The DRIVER statement parameters are read from a sequential file during system startup, and can be modified after startup using the ALTER operator command. Some parameters can be modified when the line driver is open or closed. Others can be modified only when the line driver is closed. Read about the ALTER and CLOSE commands in *TCPX Operator Commands*. The open/closed requirement for each parameter is included in the parameter descriptions.

## DRIVER Statement Parameters

This section describes all of the parameters that can be used for the TCPX DRIVER statement.

- ACCEPTUI Parameter
- API Parameter
- APITRACE Parameter
- CONNQUE Parameter
- DRVCHAR Parameter
- DRVNAME Parameter
- KEEPALIV Parameter
- MULTSESS Parameter
- NUMUSERS Parameter
- OPTIONS1 Parameter
- OPTIONS2 Parameter
- PSTATS Parameter
- RESTART Parameter
- RSTATS Parameter
- SERVERID Parameter
- STATINT Parameter
- SUBSYS Parameter
- TRACE Parameter
- TRACELEV Parameter
- TRACESIZ Parameter

- USERID Parameter

For more information about syntax conventions and rules used in this section, read *Conventions*.

## ACCEPTUI Parameter

```
ACCEPTUI = { Y | N }
```

This optional parameter determines whether the line driver will accept connections from systems that have not been previously defined with LINK statements. The ACCEPTUI parameter can be modified when the line driver is open or closed.

Valid values are "Y" (Yes) or "N" (No).

- If "Y" is specified, Entire Net-Work will accept connection requests from an undefined system and the required control blocks are built dynamically. Normal "handshaking" procedures with the new connections are performed. This is the default.
- If "N" is specified, Entire Net-Work will reject incoming requests from unknown source nodes.

## API Parameter

```
API = { HPS | OES }
```

This required parameter specifies the name of the TCP/IP application program interface being used. The API parameter can be modified only when the line driver is closed. Supported values are shown in the table below. There is no default.

| Value | Description                                                        | Valid for Platforms |
|-------|--------------------------------------------------------------------|---------------------|
| HPS   | Loads the IBM interface NWTCPHPS (High Performance Native Sockets) | z/OS and OS/390     |
| OES   | Loads the IBM OpenEdition sockets interface NWTCPOES               | z/OS and OS/390     |

## APITRACE Parameter

```
APITRACE = { N | Y, N | Y, N | Y, N | Y, N | Y, N | Y, N | Y, N | Y, N | Y, N | Y }
```

This optional parameter specifies debugging trace levels. It is a series of flags that are passed to the API routine, which then determines the events to be traced. The APITRACE specification must be enclosed in parentheses. For example:

```
APITRACE = ( N, N, N, N, N, N, N, N, N, N )
```

Trace levels are positional within the parameter syntax-example and are set using Y (Yes) and N (No). It is recommended that all flags remain set to N, the default value. If your system is experiencing problems, contact your Software AG technical support representative for the settings that will produce the appropriate trace information. The APITRACE parameter can be modified when the line driver is open or closed.

## CONNQUE Parameter

```
CONNQUE = { n | 10 }
```

This optional parameter specifies the number of connect queue entries. The value specified must accommodate the maximum number of simultaneous connection requests from remote nodes.

After the connection is accepted or rejected, connect queue entries are reused. If the value of this parameter is not high enough, the API routine is not able to process the incoming connection and the partner eventually will time out. Depending on the API being used, a message may be displayed indicating that an error has occurred. Values can range from 1 to 64; a value greater than 64 is reset to 64. The default value is 10. The CONNQUE parameter can be modified only when the line driver is closed.

## DRVCHAR Parameter

```
DRVCHAR = { char | # }
```

This optional parameter specifies the special character used to designate that an operator command should be directed to this line driver rather than to a specific link. The DRVCHAR parameter can be modified only when the line driver is closed.

The default for this parameter is "#".

## DRVNAME Parameter

```
DRVNAME = { name | TCPX }
```

This optional parameter specifies the 4-byte driver name. The DRVNAME parameter can be modified only when the line driver is closed.

The default for this parameter is "TCPX".

The DRVNAME parameter enables sites to make multiple TCP/IP API routines available at the same time. For example, the IBM APIs can be made available within the same Entire Net-Work address space. This parameter also allows two or more drivers to be defined so that Entire Net-Work can listen on multiple ports simultaneously.

## KEEPALIV Parameter

**KEEPALIV = { Y | N }**

This optional parameter allows you to maintain connections when there is no other traffic with the remote links. Valid values are "Y" or "N."

- When this value is set to "Y", it causes internal TCP messages to be sent periodically to all remote links, thus maintaining the connections when there is no other traffic with the remote links. The amount of time between messages is determined by an initialization parameter in the TCP stack.
- When this value is set to "N", internal TCP messages are no longer sent periodically and the connections are not maintained.

The default for this parameter is "N".

KEEPALIV can also be set for individual remote links. For more information, read about the KEEPALIV parameter associated with the TCPX LINK statement.

## MULTSESS Parameter

**MULTSESS = { N | Y }**

This optional parameter determines whether a connect request from a host that has an active connection is treated as a new link. This parameter can be modified when the line driver is open or closed.

A value of "Y" indicates that the connect request is treated as a new link; a value of "N" indicates that the connect request is rejected.

The default for this parameter is "Y".

## NUMUSERS Parameter

**NUMUSERS = { *number* | 100 }**

This parameter specifies the estimated maximum number of concurrently active clients. For performance reasons, a table of individual client entries is preallocated based on this number. During the Entire Net-Work session, if the number of active clients is exceeded, the table is automatically expanded by 50% of the current value. The size of each entry in the table is 256 bytes. The minimum value is 10, maximum is 32767. The default is 100.

### Note:

This parameter can only be altered when the driver is closed.

## OPTIONS1 Parameter

```
OPTIONS1 = (n, n, n, n, n, n, n, n, n, n)
```

This optional parameter allows up to ten numeric API-specific options to be set. The values can be modified when the line driver is open or closed. There are no default values.

## OPTIONS2 Parameter

```
OPTIONS2 = (x, x, x, x, x)
```

This optional parameter allows up to five alphanumeric API-specific options to be set. The values can be modified when the line driver is open or closed. There are no default values.

## PSTATS Parameter

```
PSTATS = { Y | N }
```

This optional parameter determines whether or not statistics are printed.

A value of "Y" indicates that statistics should be printed to DDPRINT when the statistics interval expires; a value of "N" indicates that the statistics should not be printed.

This parameter does not affect the STATS command and can be modified when the driver is open or closed.

The default for this parameter is "N".

## RESTART Parameter

```
RESTART = (interval, retries)
```

This optional parameter specifies the retry interval in seconds (*interval*) and the number of retries (*retries*) that Entire Net-Work will attempt to reopen the access method with the API after a shutdown due to a failure. The RESTART parameter can be modified when the line driver is open or closed.

If RESTART is not specified, or *interval* is specified as zero, no retry is attempted. By specifying (*retries*) as zero, an infinite number of retries can be requested.

The RESTART parameter is particularly useful with the Simple Connection Line Driver when Entire Net-Work is started at IPL and communication with the API is unsuccessful because TCP/IP is not yet fully initialized. Using this parameter, you can instruct Entire Net-Work to reopen the TCP/IP session, thereby giving TCP/IP sufficient time to become active.

The TIMER parameter on the NODE statement affects the RESTART parameter (see the section *Entire Net-Work NODE Statement*.) The retry interval should not be less than the TIMER parameter, and should be a multiple of this value. If a retry interval other than zero is specified that is less than the value of the TIMER parameter, the TIMER value is used instead.

## RSTATS Parameter

```
RSTATS = { Y | N }
```

This optional parameter determines whether or not statistics are reset.

A value of "Y" indicates that statistics should be reset when the statistics interval expires; a value of "N" indicates that the statistics should not be reset.

The RSTATS parameter can be modified when the line driver is open or closed.

The default for this parameter is "N".

## SERVERID Parameter

```
SERVERID = { n | 1996 }
```

This optional parameter specifies a well known port number used by Entire Net-Work while awaiting connection requests from participating Entire Net-Work partners. Values may range from 1 to 65535. The SERVERID parameter can be modified only when the line driver is closed.

When specified in a DRIVER statement, the SERVERID parameter specifies the port number of the Entire Net-Work being initialized. If SERVERID is not specified for a link, the SERVERID specified for the driver is used as the default port for the link.

The default for this parameter is 1996. Only the DRIVER statement has a SERVERID parameter.

## STATINT Parameter

```
STATINT = { interval | 3600 }
```

This optional parameter specifies the amount of time, in seconds, before statistics are automatically printed or reset. The default is 3600. The STATINT parameter can be modified when the line driver is open or closed.

Acceptable values range from 1 to 2147483647. Any value outside this range is in error.

The valid values for this parameter vary, depending on the line driver you are using, as described in the table below:

## SUBSYS Parameter

**SUBSYS = {*name* | VMCF}**

This parameter specifies the name of the subsystem to be accessed by the API routines that use subsystem control blocks in interaddress space communications. The default value is VMCF. The SUBSYS parameter can be modified only when the line driver is closed.

In a z/OS environment, the IBM API routines communicate to the system address space by locating the subsystem control table and retrieving the information required to perform cross-memory communication. If the subsystem is specified incorrectly, the driver is not able to perform its open processing and no connections are possible.

## TRACE Parameter

**TRACE = {*Y* | N}**

This parameter indicates whether tracing for this line driver should be active (Y) or not (N). When tracing is activated, trace information is placed in the trace table. The default is N (no). The TRACE parameter can be modified when the line driver is open or closed.

This is equivalent to specifying `TRACE=linedriver-code` or `TRON=linedriver-code` in the NODE statement (for example, `TRACE=CTCA`).

## TRACELEV Parameter

**TRACELEV = (*Y* | N, *Y* | N, *Y* | N, *Y* | N, *Y* | N, *Y* | N, *Y* | N, *Y* | N, *Y* | N, *Y* | N)**

This optional parameter specifies the levels of tracing that the line driver will perform. It is a series of flags that determine which events are traced. The TRACELEV specification must be enclosed in parentheses. For example:

**TRACELEV=(N,N,N,N,N,N,N,N,N,N)**

Trace levels are positional within the parameter syntax and are set using Y (Yes) or N (No). It is recommended that all settings within the TRACELEV parameter be N. If your system experiences problems, contact your Software AG technical support representative for the settings that produce the appropriate trace information. The TRACELEV parameter can be modified when the line driver is open or closed.

### Note:

The tracing information provided is sent to the DDPRINT data set. In addition to setting the TRACELEV flags, the trace must also be turned on using either the DRIVER statement parameter `TRACE=Y` or the operator command `TRACE=linedriver-name`. Tracing dramatically affects the overall performance and throughput of Entire Net-Work.

## TRACESIZ Parameter

```
TRACESIZ = { size | 4096 }
```

This optional parameter specifies the size, in bytes, of the driver-specific trace table.

This parameter is also used as the default size of the link specific trace table when the LINK statement does not include a TRACESIZ specification.

Valid values can range from 4096 to 4194304. A value less than 4096 is reset to 4096; a value greater than 4194304 is reset to 4194304.

The TRACESIZ parameter can be modified only when the line driver is closed.

The default for this parameter is "4096".

## USERID Parameter

```
USERID = { userid | TCPIP }
```

This parameter's value can be modified only when the line driver is closed.

The USERID parameter specifies the name of the started task, job, or virtual machine in which the IBM TCP/IP protocol stack is running. The value is 1-8 characters. The default value is TCPIP.