DFS Client for Windows NT™ Online Help

Audience	Users of the DFS Client for Windows NT who are either familiar with Microsoft® Windows NT or have a basic knowledge of using windows applications.
Purpose	To provide DFS users with an overview of DFS and information and instructions for using, administering, and maintaining the DFS Client.
Production Notes	Text Microsoft Word and Doc-to-Help
Research	Discussion with development and training and experimentation with the system.
Sample Information	This sample includes help topics related to the dfstrace command suite.

Introduction to the dfstrace Command Suite

This set of topics discuss the commands in the **dfstrace** command suite. The **dfstrace** commands allow you to isolate and diagnose problems. You can use the **dfstrace** commands to perform the following operations:

- Clear trace logs (using the dfstrace clear command)
- Dump trace logs (using the dfstrace dump command)
- List information on trace logs (using the dfstrace lslog command)
- List driver event sets and their states (using the dfstrace lsset command)
- Set the size of a trace log (using the dfstrace setlog command)
- Set the state of DFS driver event sets (using the dfstrace setset command)

The **dfstrace** program traces specific events within the DFS driver. The **dfstrace** program writes information on each event to trace logs. Administrative users issue **dfstrace** commands to diagnose problems within the DFS driver. You can review event sets that the **dfstrace** program writes to trace logs to determine how the DFS driver is working.

An event set is a set of events that occur within the DFS driver. Each event set contains trace messages representative of the types of events that the **dfstrace** program traces.

A trace log stores information about events that the **dfstrace** program traces. All trace logs reside in memory that an administrator allocates on the initialization of the DFS driver. The default size of a trace log is pre-defined; however, you can change this size. The size of trace logs is measured in 4-kilobyte units (kwords). An event set can use from one to eight trace logs to write information. Any number of event sets can be written to a single trace log.

Event Set States

There are three event set states:

- `active` — Tracing is enabled for the event set. The event set claims space occupied by the logs to which it sends data.

- `inactive` — Tracing is temporarily disabled for the event set. The event set continues to claim space occupied by the logs to which it sends data.

- `dormant` — Tracing is disabled for the event set. The event set releases its claim to space occupied by the logs to which it sends data. When all event sets that send data to a particular log are in this `dormant` state, the space allocated for that log is freed.

There are two persistent states for event sets:

- `persistent` — The event set is marked with the `persistent` attribute that prevents accidental changing of an event set's state. This indicates that you cannot set the event set's state during a global state setting, executed by issuing the **dfstrace setset** command without the **-set** option; you can set the event set if you specify it with the **-set** option. You cannot remove the `persistent` attribute from the event set.

- `non-persistent` — The event set is not marked with the `persistent` attribute. This indicates that you can set the event set during a global state setting, executed by issuing the **dfstrace**

setset command without the **-set** option.

Trace Log States

There are two allocation states for trace logs:

- `allocated` — Space is allocated for the trace log in memory. This indicates that one or more of the event sets that write to this log are either `active` or `inactive`.

- `unallocated` — Space is not allocated for the trace log in memory. This indicates that all the event sets that write to this log are `dormant`.

There are two persistent states for trace logs:

- `persistent` — The trace log is marked with the `persistent` attribute that prevents accidental clearing of important trace logs. This indicates that you cannot clear the trace log during a global log clearing, executed by issuing the **dfstrace clear** command without the **-set** or **-log** option; you can clear the trace log if you specify it with either the **-set** or **-log** option. You cannot remove the `persistent` attribute from the trace log.

- `non-persistent` — The trace log is not marked with the `persistent` attribute. This indicates that you can clear the trace log during a global log clearing, executed by issuing the **dfstrace clear** command without the **-set** or **-log** option.

You can receive help about **dfstrace** commands in several ways. The following examples summarize the syntax of the different help options:

dfstrace help

Displays a list and short description of each command in the **dfstrace** command suite.

dfstrace help *command*

Displays the syntax for a single *command*.

dfstrace apropos -topic *string*

Displays a short description of any commands whose help entry contains the specified *string*.

dfstrace apropos

NAME

dfstrace apropos — Displays a short description of each command whose help entry contains a specified string

SYNOPSIS

dfstrace apropos -topic *string* [**-help**]

OPTIONS

-topic *string*

Specifies the *string* for which to search, where *string* refers to a word or phrase. If you want the command to search for more than a single word, surround the string with "" (double quotes) or other delimiters.

You can specify a command with this option instead of a word or phrase. Type all strings for **dfstrace** commands in lowercase letters. Provide only the second part of the command name when using a command as the topic string (for example, **clear**, not **dfstrace clear**).

-help

Displays the name, short description, and syntax of the command. All other valid options that you specify with the command are ignored.

DESCRIPTION

The **dfstrace apropos** command displays the first line of the command help entry for any command whose help entry contains the string specified by the **-topic** option in its name or short description. To display the syntax of a command, use the **dfstrace help** command.

EXAMPLES

The following command lists the first line of the help entry for each **dfstrace** command that contains the word **log** in its name or short description:

dfstrace apropos -topic log

```
clear: clear logs by logname or event set
dump: dump DFS trace logs
lslog: list available logs
setlog: set the size of a log
```

The following command lists the first line of the help entry for each **dfstrace** command that contains the phrase **"event set"** in its name or short description:

dfstrace apropos -topic "event set"

```
clear: clear logs by logname or event set
lsset: list available event sets
setset: set state of event sets
```

RELATED INFORMATION

Commands: dfstrace help

dfstrace clear

dfstrace clear — Clears trace logs

dfstrace clear [{**-set** *set_name*... | **-log** *log_name*...}] [**-help**]

OPTIONS

-set *set_name*...

Specifies the name of each event set whose trace logs you want to clear. Use this option or use the **-log** option. Omit both options to clear all non-persistent trace logs on the local machine. Separate each name with one or more spaces.

-log *log_name*...

Specifies the name of each trace log that you want to clear. Use this option or use the **-set** option. Omit both options to clear all non-persistent trace logs on the local machine. Separate each name with one or more spaces.

-help

Displays the name, short description, and syntax of the command. All other valid options that you specify with the command are ignored.

DESCRIPTION

The **dfstrace clear** command clears specified trace logs that reside on the local machine. Identify the trace log you want to clear with the **-set** or **-log** option. Omit both the **-set** and **-log** options to clear all non-persistent trace logs on the local machine.

A trace log can be either persistent or non-persistent. The persistent attribute prevents accidental clearing of important trace logs. You cannot clear a persistent trace log during a global log clearing, executed by issuing **dfstrace clear** without the **-set** or **-log** option; you can clear the trace log if you specify it with either the **-set** or **-log** option. You cannot remove the persistent attribute from a trace log.

EXAMPLES

The following command clears all trace logs used by the **cm** event set:

dfstrace clear -set cm

The following command clears the **cmfx** trace log:

dfstrace clear -log cmfx

RELATED INFORMATION

Commands: dfstrace lslog, dfstrace lsset

dfstrace dump

NAME

dfstrace dump — Dumps trace logs

SYNOPSIS

dfstrace dump [{**-set** *set_name*... | **-log** *log_name*...}] [**-file** *output_filename*] [**-raw**] [**-help**]

OPTIONS

-set *set_name*...

Specifies the name of each event set whose corresponding trace logs you want to dump. Use this option or use the **-log** option. Omit both options to dump all trace logs on the local machine. If you specify multiple event sets that point to the same trace log, that trace log is dumped multiple times. Separate each name with one or more spaces.

-log *log_name*...

Specifies the name of each trace log that you want to dump. A trace log is cleared when it is continuously dumped. Use this option or use the **-set** option. Omit both options to dump all trace logs on the local machine. Separate each name with one or more spaces.

-file *output_filename*

Indicates the name of a file to which you want to write the output of the command. If the file already exists, the **dfstrace** program writes over the information in the file. If you omit this option, the **dfstrace** program writes event set information to standard output.

-raw

Indicates that the **dfstrace** program is to write event set information without processing it. Each event set has a number, or code, assigned to it. Processing event set information is replacing the event set code with a text string that explains the code.

-help

Displays the name, short description, and syntax of the command. All other valid options that you specify with the command are ignored.

DESCRIPTION

The **dfstrace dump** command dumps the specified trace logs that reside on the local machine. Identify the trace log you want to dump with the **-set** or **-log** option. Omit both the **-set** and **-log** options to dump all trace logs on the local machine.

You can dump a trace log to the *output_filename* specified with the **-file** option. Omit the **-file** option to dump the trace log to standard output. Use the **-raw** option to dump trace log information without replacing the event set code with a text string that explains the code.

OUTPUT

The beginning of the output of each dump consists of the date and time at which the dump began and the number of logs being dumped. The format of each log message follows:

`time` *timestamp,* `pid` *processID:* *message*

The log message contains the following three components:

- *timestamp* the timestamp associated with the message
- *processID* the process ID or thread ID associated with the message
- *message* the message itself

Following is an example of a log message:

```
time 520.219483, pid 25135:  fshs_GetHost, cookie 667de00
```

DFS writes a current time message to each log every 1024 seconds. This message has the following format:

```
time timestamp, pid 0:  Current time:  unix_time
```

where *unix_time* is the day, month, date, time, and year that the current time message was written. Following is an example of a current time message:

```
time 715.203951, pid 0:  Current time:  Mon Sep 20 13:05:15 1993
```

The timestamp associated with a log message indicates the number of seconds that have elapsed since the last current time message. You can use the current time message and the timestamp of a log message as follows to determine the actual time associated with the log message:

1. Locate the log message whose actual time you want to determine.
2. Search backward through the dump record until you come to a current time message.
3. Add the timestamp of the log message to the time indicated by the current time message.

For example, if the timestamp of a log message indicates 520.219483 seconds have passed since the last current time message, and the last current time message indicates a time of **12:00:00**, the actual time of the log is **12:08:40**.

Some data can be overwritten before you read it because DFS stores log data in a finite, circular buffer. The following message appears at the appropriate place in the dump if this happens:

```
Log wrapped; data missing.
```

This message indicates that not all data is being written to the log if it appears in the middle of a dump. You can increase the size of the log with the **dfstrace setlog** command to alleviate this problem.

EXAMPLES

The following command dumps the log used by the **cm** event set on the local machine:

dfstrace dump -set cm

```
DFS Trace Dump -
        Date:  Fri Oct  8  10:18:02 1993
Found 1 logs.
Contents of log cmfx:
Log wrapped; data missing.
time 520.211319, pid 25135:  found a princ 62b4144 ref 3
time 520.211355, pid 25135:  find a princ (fast path) 62b4144, ref 3
time 520.211387, pid 25135:  fshs_GetPrincipal END 62b4144, ref 3
time 520.211411, pid 25135:  fshs_PutPrincipal 62b4144 ref 3
time 520.219153, pid 25135:  Lookup 8005a4d.81c6c35.0.3fe/param.h, flags 0x1
```

```
time 520.219440, pid 25135:  fshs_GetPrincipal START
time 520.219483, pid 25135:  fshs_GetHost, cookie 667de00
time 520.219511, pid 25135:  fshs_FindHost, cookie 667de00
time 520.219559, pid 25135:  find a prime host 62a2068
time 520.219590, pid 25135:  find a host in fast path 62a2068
time 520.219625, pid 25135:  fshs_FindPrincipal ..
time 715.203951, pid 0:  Current time:  Mon Sep 20 13:05:15 1993
time 717.969835, pid 24621:  fshs_GetPrincipal START
time 717.969881, pid 24621:  fshs_GetHost, cookie 66eed80
time 718.969910, pid 24621:  fshs_FindHost, cookie 66eed80
time 718.969959, pid 24621:  find a prime host 62a2068
```

RELATED INFORMATION

Commands: dfstrace lslog, dfstrace lsset, dfstrace setlog

dfstrace help

NAME

dfstrace help — Displays the name, short description, and syntax of a specified command or a short description of all **dfstrace** commands

SYNOPSIS

dfstrace help [-**topic** *string*...] [-**help**]

OPTIONS

-**topic** *string*...

Specifies the command whose name, short description, and syntax you want to display. Provide only the second part of the command name (for example, **clear**, not **dfstrace clear**). Type all strings for **dfstrace** commands in lowercase letters. If you omit this option, the command describes all **dfstrace** commands briefly.

-**help**

Displays the name, short description, and syntax of the command. All other valid options that you specify with the command are ignored.

DESCRIPTION

The **dfstrace help** command displays the entire command help entry for the command specified by the -**topic** option. The **dfstrace help** command displays the first line of the command help entry for every command in the **dfstrace** command suite if you omit the -**topic** option.

To display the first line of a help entry whose command name or brief description contains a specified string, use the **dfstrace apropos** command.

OUTPUT

Each **dfstrace** command help entry consists of the following two lines:

- First line — The name and brief description of the command
- Second line — The syntax of the command, showing the command options in the prescribed order

EXAMPLES

The following command lists the first line of the help entry for each **dfstrace** command:

dfstrace help

```
dfstrace: Commands are:
apropos          search by help text
clear            clear logs by logname or by event set
dump             dump DFS trace logs
help             get help on commands
lslog            list available logs
lsset            list available event sets
setlog           set the size of a log
setset           set state of event sets
```

The following command lists the entire help entry for the **dfstrace lsset** command:

dfstrace help -topic lsset

dfstrace lsset: list available event sets

Usage: dfstrace lsset [-set <set_name>...] [-help]

RELATED INFORMATION

Commands: dfstrace apropos

dfstrace lslog

NAME

dfstrace lslog — Lists information on trace logs

SYNOPSIS

dfstrace lslog [{**-set** *set_name*... | **-log** *log_name*...}] [**-long**] [**-help**]

OPTIONS

-set *set_name*...

Specifies the name of each event set whose corresponding trace logs you want to list. Use this option or use the **-log** option. Omit both options to list all trace logs on the local machine. Separate each name with one or more spaces.

-log *log_name*...

Specifies the name of each trace log that you want to list. Use this option or use the **-set** option. Omit both options to list all trace logs on the local machine. Separate each name with one or more spaces.

-long

Directs the **dfstrace lslog** command to provide additional information about each trace log, including the size of the trace log in 4-kilobyte units (kwords) and whether the trace log is physically allocated in the DFS driver.

-help

Displays the name, short description, and syntax of the command. All other valid options that you specify with the command are ignored.

DESCRIPTION

The **dfstrace lslog** command lists the specified trace logs that reside on the local machine. Identify the trace log you want to list with the **-set** or **-log** option. Omit both the **-set** and **-log** options to list all trace logs on the local machine.

The **dfstrace lslog** command displays size and allocation information for the trace logs if you specify the **-long** option. There are two allocation states for trace logs:

- allocated — Space is allocated for the trace log in memory. This indicates that one or more of the event sets that write to this log are either active or inactive.

- unallocated — Space is not allocated for the trace log in memory. This indicates that all the event sets that write to this log are dormant.

A trace log can also be either persistent or non-persistent. The persistent attribute prevents accidental clearing of important trace logs. You cannot currently determine the persistence of trace logs using the **dfstrace** commands. You cannot clear a persistent trace log during a global log clearing, executed by issuing the **dfstrace clear** command without the **-set** or **-log** option; you can clear the trace log if you specify it with either the **-set** or **-log** option. You cannot remove the persistent attribute from the trace log.

OUTPUT

The **dfstrace lslog** command lists the trace logs that reside on the local machine. You can also list the trace logs with the size of each trace log in kwords and the allocation state of each trace log with the **-long** option.

EXAMPLES

The following command lists all trace logs on the local machine:

dfstrace lslog

```
Available logs:

cmfx
```

RELATED INFORMATION

Commands: dfstrace lsset, dfstrace setlog

dfstrace lsset

NAME

dfstrace lsset — Lists DFS driver event sets and their states

SYNOPSIS

dfstrace lsset [**-set** *set_name*...] [**-help**]

OPTIONS

-set *set_name*...

Specifies the name of each event set you want to list. Omit this option to list all event sets on the local machine. Separate each name with one or more spaces.

-help

Displays the name, short description, and syntax of the command. All other valid options that you specify with the command are ignored.

DESCRIPTION

The **dfstrace lsset** command lists the specified event sets on the local machine and their states. There are three event set states:

- `active` — Tracing is enabled for the event set. The event set claims space occupied by the logs to which it sends data.

- `inactive` — Tracing is temporarily disabled for the event set. The event set continues to claim space occupied by the logs to which it sends data.

- `dormant` — Tracing is disabled for the event set. The event set releases its claim to space occupied by the logs to which it sends data. When all event sets that send data to a particular log are in this `dormant` state, the space allocated for that log is freed.

An event set can also be either `persistent` or `non-persistent`. The `persistent` attribute prevents accidental changing of an event set's state. You cannot set a `persistent` event set during a global state setting, executed by issuing **dfstrace setset** without the **-set** option; you can set the event set if you specify it with the **-set** option. You cannot remove the `persistent` attribute from an event set.

Identify the specific event set you want to list with the **-set** option. Omit the **-set** option to list all event sets on the local machine. You cannot currently determine the persistence of event sets using the **dfstrace** commands.

OUTPUT

The **dfstrace lsset** command lists each event set and its state in the following format:

event set: *state*

EXAMPLES

The following command lists all event sets on the local machine:

dfstrace lsset

```
Available sets:
```

```
tpq:   dormant
cm:    dormant
```

RELATED INFORMATION

Commands: <u>dfstrace lslog</u>, <u>dfstrace setset</u>

dfstrace setlog

NAME

dfstrace setlog — Sets the size of the indicated trace log

SYNOPSIS

dfstrace setlog -log *log_name* **-buffersize** *4-kilobyte units* [**-help**]

OPTIONS

-log *log_name*

Specifies the name of the trace log whose size you want to set.

-buffersize

Specifies the size of the trace log in 4-kilobyte units (kwords).

-help

Displays the name, short description, and syntax of the command. All other valid options that you specify with the command are ignored.

DESCRIPTION

The **dfstrace setlog** command sets the size of a trace log. The size of a trace log is set in 4-kilobyte units (kwords). When you run this command on a trace log that is already allocated (one or more event sets that write to the trace log are either `active` or `inactive`), the **dfstrace setlog** command clears and frees the log and creates a new log of the specified size. Otherwise, the **dfstrace setlog** command creates a log of the specified size at the time the trace log becomes allocated.

To display the current size and allocation status of a trace log, issue the **dfstrace lslog** command with the **-long** option.

EXAMPLES

The following command sets the size of the **cmfx** trace log to 16 kwords (64 KB):

dfstrace setlog cmfx 16

RELATED INFORMATION

Commands: dfstrace lslog

dfstrace setset

NAME

dfstrace setset — Sets the state of DFS driver event sets

SYNOPSIS

dfstrace setset [-set *set_name*...] [{-active | -inactive | -dormant}] [-help]

OPTIONS

-set *set_name*...

Specifies the name of each event set whose state you want to set. Omit this option to set the state for all non-persistent DFS driver event sets on the local machine. Separate each name with one or more spaces.

-active

Sets the state of each specified event set to active. Use this option, or use the **-inactive** or **-dormant** option.

-inactive

Sets the state of each specified event set to inactive. Use this option, or use the **-active** or **-dormant** option.

-dormant

Sets the state of each specified event set to dormant. Use this option, or use the **-active** or **-inactive** option.

-help

Displays the name, short description, and syntax of the command. All other valid options that you specify with the command are ignored.

DESCRIPTION

The **dfstrace setset** command sets the state of event sets on the local machine. There are three event set states:

- active — Tracing is enabled for the event set. The event set claims space occupied by the logs to which it sends data.

- inactive — Tracing is temporarily disabled for the event set. The event set continues to claim space occupied by the logs to which it sends data.

- dormant — Tracing is disabled for the event set. The event set releases its claim to space occupied by the logs to which it sends data. When all event sets that send data to a particular log are in this dormant state, the space allocated for that log is freed.

An event set can also be either persistent or non-persistent. The persistent attribute prevents accidental changing of an event set's state. You cannot set a persistent event set during a global state setting, executed by issuing the **dfstrace setset** command without the **-set** option; you can set the event set if you specify it with the **-set** option. You cannot remove the persistent attribute from an event set.

Identify the specific event set you want to set with the **-set** option. Omit the **-set** option to set all `non-persistent` event sets on the local machine. The default state is `active`. If you issue this command without identifying a state, the command sets the event set's state to `active`.

EXAMPLES

The following command sets the state of all `non-persistent` event sets on the local machine to `inactive`:

dfstrace setset -inactive

RELATED INFORMATION

Commands: dfstrace lsset